YACHTING

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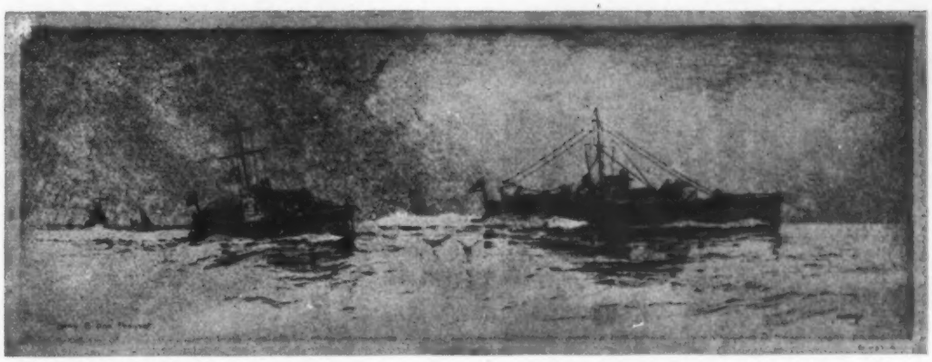


Courtesy Yachting Monthly

These little motor vessels-of-war were designed and built by the Elco Works, Bayonne, N. J., and are propelled by twin Standard Motors

M. L. Notions and Facts

Whether the service calls for hunting mines, scouting for enemy submarines, rescuing shell-torn man-o-war's or merchantmen's crews or standing up to battle single-handed with a Hun U-boat, the M. L.s and their crews are equal to a correct performance of everything asked them

By "SEVEN PENNANT"

I AM the commanding officer of a sweeper, a very humble one—the most humble of the genus, and the smallest too of his Majesty's Auxiliary Fleet. I and my brothers of the same family toil the deep in most weathers, sometimes a little laughed at by the Navy and our larger fellow sweepers; sometimes I think a little pitied. Yet as time passes in this interminable war we are more and more recognized as serious cogwheels in the great machine and capable of doing our little share. As I write the news has come through that the T.B.D.'s and regular Navy cheered to the echo some of our brave little vessels on their return from Zeebrugge. All honor to you brave M.L. officers and men! Professional seamen you may not be, in the sense that you have been brought up to the calling for a livelihood; but nevertheless you have proved you are of the same good stock and capable of daring deeds and sacrifice. It seems to me now that thanks to you we have lived down the rather contemptuous pity, mingled with amusement, our professional brethren at first entertained for us and that we are at last coming into our own.

But to resume, I am a sweeper; only a combatant in the indirect sense of the word, yet withal doing business that I take it the average conscientious objector would rather shun. Anyway we do not meet them in our "show," nor do I think we want to. Too much imagination or conscience, is not a very wholesome quality to possess for those who search the sea for the iron horned assassin. Imagination is apt to make one expect an explosion in the trough of every swell as it passes, and the black back of a diver appears like a momentary glimpse of the top of the smooth round surface of a mine. No, it is better not to imagine or think too much at our game, but to go through the day and the area, much in the same frame of mind as I imagine a doctor would go through a ward full of dangerous infectious cases. After all one can but die once, and to those of us who are of middle age and over—and I can assure the reader that their number is legion—the prospect is perhaps less harrowing than the chance of a lingering death in old age of some dread disease. Besides has not some famous Latin author said "dulce est pro patris mori"; not that I think that this latter sentiment appeals to us as much of a recommendation to be hoisted with a Hun petard, for our job has developed into a routine sort of business, and most of us have begun to look at the risk we run as being all in the game and one of the few disadvantages inseparable from our calling. Some of us do not mind even being blown up: I know a R.N.R. Lieutenant who has been "hoisted" three times, and when I ventured to suggest to him that the Authorities might now let him join the "Office Brigade" at one of our bases, he stoutly affirmed that he would see the whole blinking lot in hell before he would accept such a billet. Good boy—he is little more—all power to him and good luck; it is of stuff such as this that our Merchant Service officers are made.

Talking about being blown up, we midget sweepers have a theory that as far as we are concerned, the various kinds of life belts and waistcoats supplied are useless. We do not wish the accuracy of this theory to be tested, but I believe most of us have the courage of our convictions to the extent of ignoring the various local and headquarter orders, enjoining us to see that these uncomfortable devices are worn, not merely during the actual operation of sweeping but also during our passage to and from our ground: indeed I think it would not be an exaggeration to say that on some vessels it would be a matter of some moments to find them. Not that I defend this latter extreme disregard, for there is a happy medium in all things, and although I am willing to believe that life belts of a certain pattern are a very tolerable substitute for a pillow, yet it seems a wise precaution to remember that there are other potential disasters at sea, besides being blown up, and that the "sweet little cherub that sits up aloft" and looks after the fortunes of poor Jack is prone to help those that help themselves. Cromwell is reported to have once said to his men before a battle, "Comrades, put your trust in the Lord, but keep your powder dry." That little "*but*," does it reveal the fact that Cromwell was a humorist, or is the humor unconscious? I am not an historian, and know not; but I would advise my confreres to act on the same lines and substitute for the latter part of Cromwell's dictum

Fast, able, well armed, and largely manned by officers and men of the R. N. V. R., thousands of whom were English yachtsmen, the M. L.s are an efficient part of the British navy

"but keep your belts handy." As a suggestion, a convenient place and a dry one, may be found under the raised signal locker on the bridge: I offer this suggestion to those who have had the temerity to have had the locker placed in this position, for have we not been "told" to place it elsewhere in a retreat that is often inaccessible—I allude to the Chart Room.

Our sympathetic friends and relations on shore have often expressed pity for the hardships of the winter of wet and cold, but no one outside the M.L.'s themselves have ever realized what is really the greatest hardship of all. It is summed up in the word motion. Reader, have you ever tried to do a continual course of Swedish exercises from, say, 4 a.m. until 6 p.m. with no interval for food. I take it you have not, but if you can try and imagine to yourself the bodily fatigue and vexation of spirit that would be produced by this form of penance and then add to it wind, bitter cold and, perhaps, nay probably, wet, you may glean some idea of the hardships expressed by this little two-syllabelled word. I might also have added a slight form of nausea common to many of us, but often not admitted. Motion—and we get it throughout most days of the winter—is the curse of our existence. It is present without respite, without pity for fatigue and aching bone and muscle, an enemy to rest, to rob us of food, and indeed of every amenity of life. This briefly is what the hardships of motion mean to us. An M.L. is never on an even keel, save on the very smoothest of days, days that during the year one can count on one hand. We ride over everything, and our very lives depend on this fact, for we are too fragile to "go through" or take it really "solid." It is due to this fact, too, that our brave little ships derive their wonderful seagoing capacity.

In spite of all we hear to the contrary, how wonderful are the sea-going qualities of the M.L.s. Never in my wildest dreams did I think a small vessel of their size could live in the seas I have seen them live in, and survive without the smallest hurt, the only anxiety being the engines, the failure of which might have meant disaster, and perhaps death. The longer I live and have my being in them, the more I marvel at the boats and the more confidence I gain. How different it has turned out to that which I was led to expect in those early days of the service when we were all "doing" our M.L. course at one of the bases. Speaking personally those were the days of expectant cold feet, and so much did I hear of the unseaworthiness and general futility of these little craft, that I dreaded the day when I should have to set out on one. Even our instructors used to inform us that with a following sea in the Solent it had been found impossible to steer an M.L., and that they had even tried towing 30 fathoms of a 4-inch rope astern, but apparently without avail. Then we heard a vessel had blown up going round the coast and that the crew had perished miserably in the flames as the burning petrol surrounded them as they swam. This and like harrowing yarns were banded round, but, looking back after this considerable lapse of time, I am inclined to think it was part ignorance and partly a case of bad workmen blaming their tools.

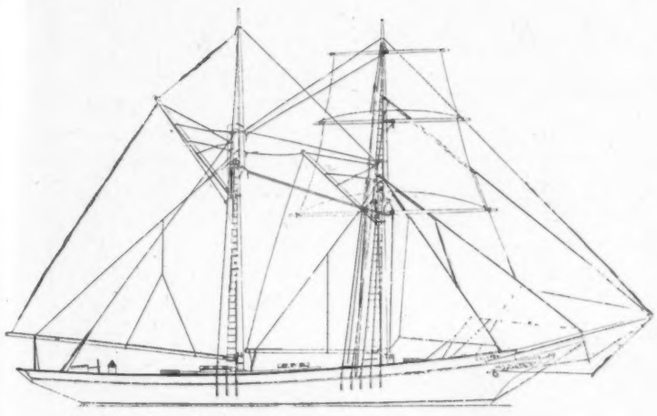
No, whatever may be their faults—and ships to those who love them are never without blemish—unseaworthiness is not one, nor am I airing this opinion without the means of practical comparison; for there are few types of vessels, from a full rigged sailing ship with skysails to a tug boat, that I have not served in, either in a professional or amateur capacity. Surely, then, I am qualified to offer some opinion. Those of my readers who love ships and understand and sympathize with the various idiosyncrasies and characteristics of different types, know how much they differ, and a fact which I think landsmen hardly realize is how one type of sailorman would be quite at a loss on a different class of ship from his own accustomed one. I should be sorry to be a passenger on a spritsail barge under the charge of, say, a mailboat captain, and *vice versa*. I do not know which alternative would be most fraught with peril. No, sailors are more specialists than is generally thought, though I hold that a good sailorman brought up in sailing craft (you cannot make one in a power boat) will adapt himself to any class of ship.

We M.L. sailors are therefore specialists. We do things and go out in weather that no sailor, accustomed to ordinary ships, would in his prudent senses attempt, unless he had served with understanding in our ships. Some of the most fundamental axioms of seamanship we put aside. Do not the more knowing ones among us invariably clear from a crowded harbor quayside in a tideway by going astern? Provided she is handled astern and not ahead, in the hands of the artist the M.L. can be made to "do anything except wait at table," but who taught the knowing ones this now quite obvious principle but that most excellent of all teachers, practical experience? And indeed it is this teacher that has taught us most of what we know. We have had to find our own way along a thorny path for the most part, with no one to advise us, and at first generally under the orders of someone who, through no fault of his own, had no more idea of what we could do than the man in the moon—in those days we had very little idea ourselves.

But to revert to the quality as a good sea boat that an M.L. possesses when intelligently handled. I remember one experience during the winter that happened to me when through want of local knowledge—a most essential qualification for the management of small ships in winter weather—I was under orders, received the previous night, to search a certain area outside one of our largest rivers, the tide of which runs a good five knots on the ebb. During the night the wind had blown very fresh right in, and that, together with the fact that the swell of the previous day had been in the same direction, gave me some warning that on the ebb (the time we were due out) there would be a nasty sea on the bar. The morning dawned gray and cold, the air was heavy and full of damp, the sun a sickly smudge of dazzle with no defined edge—sure warning of rain to come—but the wind had gone down considerably since the small hours of morning. And so I, having, I repeat, little local knowledge at that time, judged that we had better get underway and have a look at it. One doesn't care to give the authorities the least excuse to think that one wishes to seize on doubtful weather as a pretext for lying in harbor, and so some of us occasionally put to sea when, as prudent men, we should be in port.

(*Continued on page 155*)

To Henry R. Sutphen, president of the Elco works is due much of the success of the world famous fighting motor boats named by the British Admiralty, M. L.s—85 foot Elco designed and built craft that are helping in the making of world history



AS Mr. Graham intends to use *Calypso* for lengthy cruises in the West Indies the square rig was adopted; it, as is well known, gives the best results for long runs in the trade wind regions.

THE TOPSAIL SCHOONER CALYPSO

J. MURRAY WATTS, the well known Philadelphia architect has been commissioned a captain in the 57th engineers—Inland Waterways. Captain Watts' business will be carried on, during the war, by Cornell & Matthews, Bulletin Building, Philadelphia.

THE plans show a sea going auxiliary schooner designed by J. Murray Watts of Phila., for Wm. J. Graham, of Indianapolis, Ind. This yacht is 76 ft. over all, 63 ft. on the water line, has a beam of 18 ft. and draws 7 ft. of water. She will be one of the first yachts to be constructed after the war.

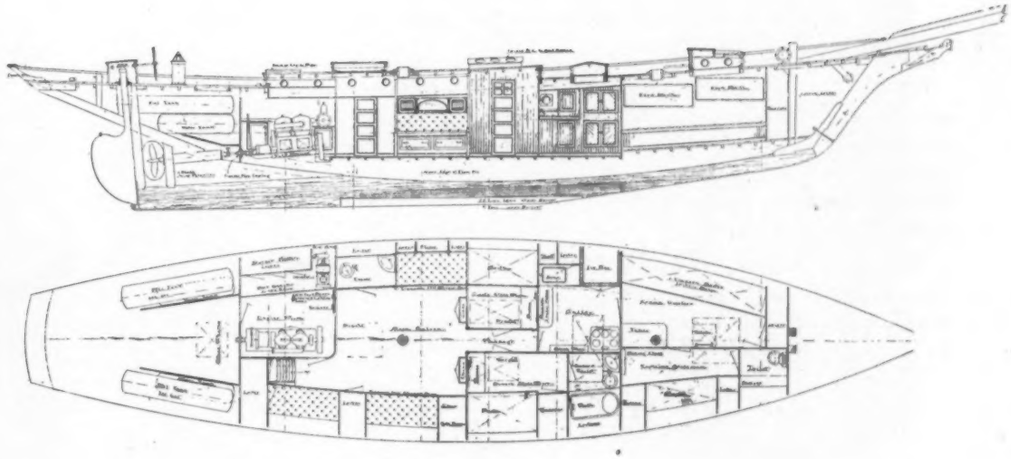
The general arrangement is very similar to the *Fareeda*, recently built from Mr. Watts' designs for Alexander Van Rensselaer, of Philadelphia, and the sail plan is much the same, only larger, than the topsail schooner *Viola II*, recently built for Marshel Jones, Jr., of Pittsburgh. The vessel is flush deck except for a small trunk house aft, and has high bulwarks and fittings such as generally seen on deep water craft. The rigging is especially strong; the sheets and halyards being of chain, and the standing rigging of extra heavy galvanized steel wire.

Capt. J. Murray Watts, U. S. A.

The accommodations below are unusually spacious, there being a main saloon 20 ft. long, on the port side of which is a toilet room, and aft of that the engine room. Forward of the main saloon there are two staterooms, the one on the starboard side being the owner's with a private bathroom adjoining. A passage between the two staterooms connects the galley and the main saloon. The captain's stateroom is on the starboard side, forward, and there are quarters for a crew of four men in the forecastle.

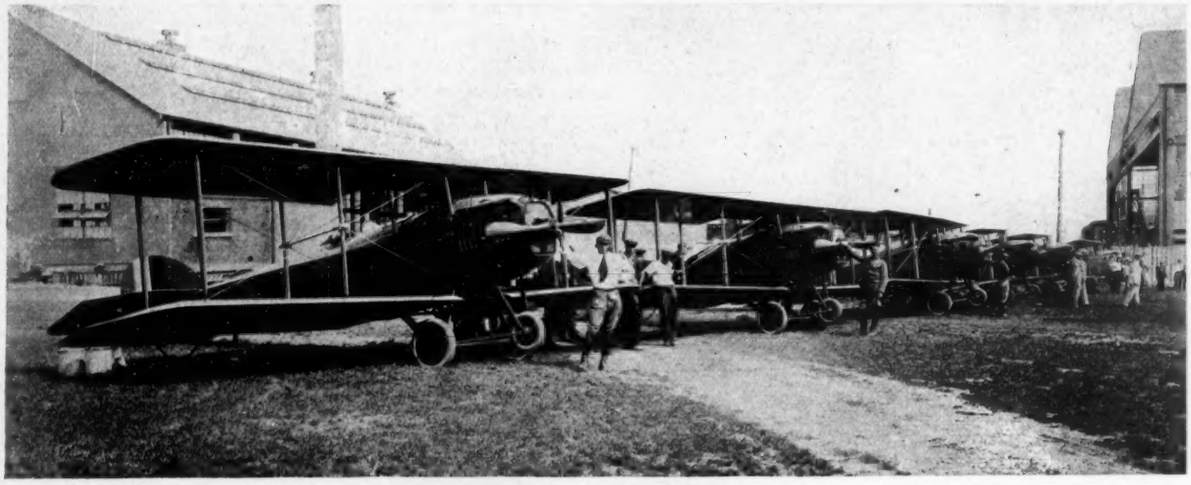
The main engine is a 6½ in. by 9 in. heavy duty Sterling with an auxiliary 1½K. W. Fay & Bowen pumping and lighting plant.

CALYPSO is handsomely finished and furnished below decks. The crew's quarters are well laid out and large. The galley is modernly fitted and has a Shipmate range. The owner's and a guest stateroom open from the forward end of the main saloon which is twenty feet long. The motor, a Sterling heavy duty machine, is installed in a separate room aft, and fuel tanks are carried under the after deck.



THE SKY BORNE MAIL

Some Facts About the Airplanes Built by the Standard Aero Corporation for Mail Carriers



I

I

AND to-day we fly! Fly with the mail even. Fly at a hundred miles an hour or more, easily, safely, rapidly. So we step in ever widening strides in mechanical achievements.

Not so many years ago the then famous Hudson River sloops carried freight, mail and passengers up and down the valley of the great North River; overland stages, rumbling over log roads crunched behind the lunge of sweating horses. An average of two or three miles an hour was high speed then.

The opening of the Erie Canal in 1825, and the canals across New Jersey a few years later, made all-water inland routes into the, then, Far West, and southward to Philadelphia and Washington. Four miles an hour, or at best four and one-half miles, looked like the ultimate speed for transportation in 1825.

And then came the steamboat, and eight miles an hour. Here was real speed and dependable—but the steam wood-burning locomotive cutting across the country astride smoothly laid parallel tracks jumped the speed of mail and transportation to well above twenty miles an hour. Within a very few years coal raised the steam pressure and then railroad trains whizzed along at fifty to sixty miles an hour.

Thanks to the gasoline motor, M. Ader, the Wrights, Langley, Curtiss and others, the airplane developed, and to-day some of the United States Mail goes via the sky route carried in planes at a speed of over 100 miles an hour.

II

THESE six aircraft, the first ever built solely for the transportation of United States mail, were built by the Standard Aero Corporation, at Plainfield, N. J. and now travel between New York and Washington, stopping at Philadelphia to leave and collect mail. A machine leaves Belmont Park, New York, every morning bound for the Capital, while its mate leaves Potomac Park, Washington starting its voyage north.

Capt. B. B. Lipsner, U. S. A. is the man largely responsible for the success of the sky-borne mail.

II

III

A LETTER to Washington in haste? Send it then by air post. Two and a half hours from New York to Philadelphia less than five hours to Washington! It consumes longer time than this for mail to travel from Bowling Green, New York City to Brooklyn, N. Y., a distance of three miles.

III

IV

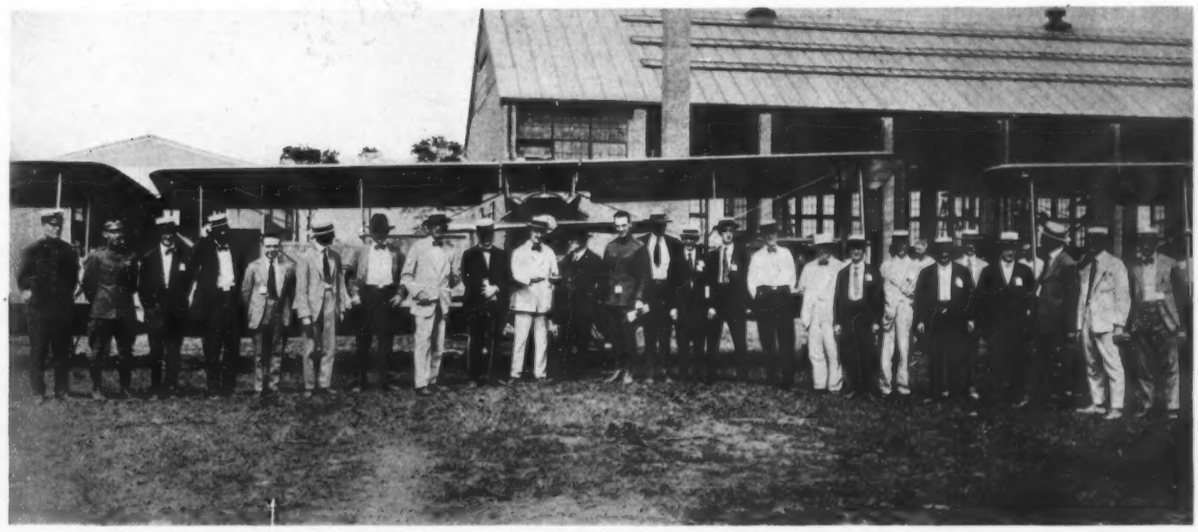
THE Standard mail planes are similar to some of the craft now building for the United States Army. They are biplanes with a wing spread of approximately 30 feet and are each powered with an 8-cylinder Hispano-Suiza Motor.

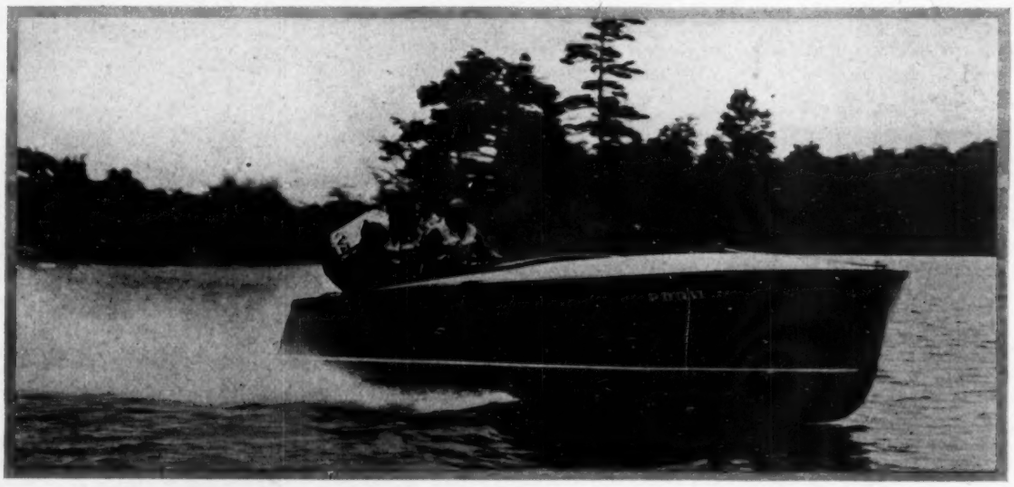
In addition to an aviator and all necessary fuel and navigation equipment, these craft can carry 300 pounds of mail with ease and at a speed that a few years ago would have seemed impossible to attain.

V

THE man at the left of the picture is Captain Bartlett, who sailed with Admiral Peary and journeyed over the ice with him in quest of the North Pole. Mr. Augustus Post is the fourth figure from the end, while Mr. Harry Powers Mingle is standing directly in front of the airplane radiator and propeller.

V





P. D. Q. VI, a Van Blerck powered flyer owned by A. G. Miles of Alexandria Bay

ALONG the St. Lawrence, especially in the Alexandria Bay section, few men are better known than Mr. A. G. Miles of the Thousand Islands Yacht Club. This is because, during the past twelve years he has been one of the leaders in developing the sport of motor-boat racing throughout the reaches of this famous island-studded river of the North.

Mr. Miles is the kind of man one never forgets, for he is a real sportsman. At every one of the regattas of the last decade his boat-house was the meeting place for all who had boats in the races. Repairs were made there, and it seemed more like a public supply station than a private boat-house.

Few craft are better known than his famous P. D. Q.s the first a displacement boat—the others, beginning with P. D. Q. II, a Tams, Lemoine & Crane designed Dixie Jr., hydroplane. Fastest of all his boats is P. D. Q. VI a 12 cylinder motored craft that hits the high spots at nearly a mile a minute pace.

It is not saying too much to mention that Mr. Miles has done more for the sport of motorboat racing and toward raising the racing game to the high level it has attained on the St. Lawrence than any one else.

Being the kind of chap that finds it irksome to keep quiet when there is anything big to do, Mr. Miles tried to get into the Navy, but was turned down because he'd turned forty-two on his last birthday. This, despite the fact that after having played a game of golf all morning, a set or two of tennis, or a period or two of polo in the early afternoon and then sailed forth to drive a hard race in one of his P. D. Q.s which alone is strenuous enough work for one day.

So as the great adventure called, as it has called to so many, many yachtsmen, Mr. Miles turned to second choice—the army—and received a captaincy in the Quartermaster Corps.

Thus the navy loses a good man, while the army gains one which, after all, is fair enough for America needs all of his kind now—as every branch of government service cries for the same kind of "pep" that built and pushed the P. D. Q.s to victories.

Photos by Levick

Almost a Deep Water Man

ARTHUR E. DIHM

IT looked as though I would have to turn beachcomber when I made the acquaintance of Jim Weaver on the Newcastle Waterfront. Paid off from an Australian coasting steamer, several weeks previously, I had spent all I possessed, and then looked about for another berth.

But things were quiet on the coast and I couldn't even find a skipper who would grant me the favor of working my passage to any port he was bound for.

Jim Weaver I soon discovered was a boarding house master, and was hunting hands for a big four masted barque lying out in the harbor bound for the west coast of South America with a cargo of coal.

According to Jim, she was a floating home, and the men who could get a chance to ship in her were to be envied. She was to sign her crew on the next afternoon, and Jim extended me a cordial invitation to stay at his place and let him use his influence to get me a berth.

But I hesitated. I was no deep waterman, and I had heard rumors along the front as to the character of the barque in question. These were to the effect that she was a hungry workhouse. Then again I knew that boarding house masters had no love for steamboat men, that if I should ship in the barque my lot would not be an easy one, due to my lack of experience. So I reasoned it out that men she had to have, and any kind were better than none, and that my advance note for three pounds payable three days after the ship sailed was what Jim was after and that his profit from it would be at least 75% after furnishing me with an outfit of clothes. The fact that my stomach was empty and there seemed no immediate prospect of filling it helped persuade me to accept the offer.

The boarding house was like nearly all of its kind; a ramshackle affair with a saloon in conjunction so that the newly paid off could find a convenient place to get rid of their hard earned money and outward bounders the couple of shillings graciously allowed them for spending money and which, of course, was deducted from their advanced note.

However, the grub tasted good and the beds were fairly clean so I ate and rested while the opportunity offered. But I noticed that the admonition of Jim's, "To stick around the house," was not an idle request, but a command he intended to have obeyed, for on my starting up the street after breakfast next morning, one of the several "runners" called me back and repeated his employer's advice, "To stick around as the barque's skipper might come up to the house."

The runner had divined my intentions, i. e. to take a walk and forget to return.

I had figured it would be the quickest way out of an unpleasant situation, even though it meant beating the boarding house out of a bed and a couple of meals. But it had been worked so often that I failed to get by with it.

So I spent the time until two o'clock lounging around and watching my chance to slip away, but it never materialized. Then, with two other lucky (?) individuals, escorted by Jim Weaver and a "runner," we went to the shipping office. Judging from the size of the crowd assembled, every boarding house master in New Castle was there with from one to a half dozen of his boarders. The skipper of the barque arrived soon after we got there and it was well for him that he stayed behind the railing where the shipping commissioner sat, and not in the open space in front of it, as otherwise the boarding house masters and their assistants would have torn the clothes off his back in their eagerness to get close to him in order to tell him of the merits of their respective boarders. As it was, they crowded forward waving aloft fistfuls of discharges, and hollering at the top of their voices "Here Cap'n, here's a good man for you" etc., etc. At the same time the runners pushed their men as close to the railing as possible. The din was terrific and the shipping commissioner finally threatened to clear the office unless it subsided.

The skipper finally made his choice of the men offered him and which did not include me or the other men from Weaver's house. The next morning we made two more trips to the Shipping Office, but without results.

It began to look as though I, at least, was slated for a considerable stay at the boarding house, but Jim Weaver had no intentions of allowing such a state of things to exist. After several days I ceased to think very much of getting away, and had made up my mind to enjoy taking life easy as long as it would last.

Then one morning about four-thirty I was roused from sleep by Weaver himself and ordered to dress as quickly as possible. On getting downstairs I found my bag of clothes and donkey's breakfast (straw mattress) awaiting me, likewise Jim Weaver. An express wagon stood at the door and we loaded the stuff into it and started off at a gallop for the water front.

Jim explained as we went, that the same four masted barque previously referred to was to sail at five o'clock or soon after and that at the last moment one of her crew had got down sick and been sent ashore to the hospital. How he got the information I do not know, but Weaver expressed the fervent hope that no other boarding house master had got wind of the situation. A boat was to have been in waiting at the dock, as the barque was lying in the stream at the outer buoy but due to some hitch was not on time.

Cussing boatmen in general, Weaver started up the dock in search of a boat, and after ten minutes hunt discovered one. The barque was quite a ways down the harbor and the tide was against us, and progress was slow. It looked as though I should make the trip to the West Coast on a windjammer after all, and I sat in the stern, moodily, cussing myself for not having had enough courage to have made a break down the street while waiting on the dock.

A sudden exclamation from Weaver interrupted my thoughts and looking up I saw a boat containing several men and baggage shoot out from behind a big tramp ahead of us. Weaver recognized the occupants as a rival boarding house master and one of his men. With offers of more pay, he urged our boatman to greater speed, but the other craft had too great a lead and while we were yet several hundred feet away we saw her go alongside the barque and two men mount her accommodation ladder.

When we reached her deck the barque's skipper had already agreed to take the man offered him and there was nothing for us to do but to return to the boarding house. To say Weaver was mad would be to express his feelings mildly. It began to look as though he had a hoodoo on his hands from which there was no escape.

The longer I stayed the more it cost him and while he fully expected to get his pay from my advance in wages, yet he figured on charging me for a week's board and lodging should I only be at his place a day or fraction thereof, which is a time honored custom among boarding house masters and crimps in general. Therefore, the sooner he shipped me the more profit he made, and the less risk he took in my skipping out.

I had fully made up my mind to get away that day, and while eating breakfast began to plan what would be the best time, for the more I thought of the towering masts and yards of a windjammer the less I liked the idea of having to go up upon them.

As I pushed back my chair from the table, the maid of all work stuck her head in the

door and announced that Jim wanted me in the front room.

Here I found him in earnest converse with a stranger whom I found was the Captain of a small German barque lying at Port Stephens a short distance up the coast. It appeared the skipper was in need of an ordinary seaman, but objected to paying the prevailing wages, two pounds a month, so he shopped around the different boarding houses to see what he could find. Weaver, of course, told him he need go no further as he had a young chap who would just suit him. I was the chap in question.

The Captain looked me over and nodded approvingly. Weaver excused himself and taking me outside confided to me that here was the chance of a lifetime. The Petrel, that was the barque's name, was an easy ship and fed well. The wages, however, were five shillings a month less, but as I owed him two weeks board and needed clothes, he suggested my taking the berth.

The suggestion was a command as I knew, so we returned to the room and he advised the captain of my willingness to go. Half an hour later we boarded a small steamer for Port Stephens.

The barque was lying out in the harbor loading logs and one of her boats was at the pier when we arrived. I noticed as we were rowed out to her that the entire conversation between the others in the boat was conducted in German and began to wonder if they spoke English. I had not been aboard the barque many hours before I learned that aside from the Skipper and First Mate not a soul aboard her could speak or understand anything but German.

The forecastle was roomy and clean, and the grub good, although there were some dishes I had never eaten before. We "turned to" at six o'clock, part of us going onto the lighter alongside and the rest into the hold. The logs were loaded in through an opening in the bow, and stowed under the direction of one of the mates. The work was hard, and we were kept at it till five o'clock when we washed down decks and tidied up.

We were due to sail in about two weeks as far as I could gather from some of the men belonging to the lighter, who were the only ones I could talk to.

It was Monday when I came aboard and when Saturday evening arrived I noticed a number of the crew putting on their best togs, so took it for granted that they were going ashore and so I proceeded to shave and change clothes as well.

The mate was standing at the gangway when I went aft with the others to get into the boat alongside. "You can't go ashore" said he. "Why?" I asked. "You got a month's advance and the skipper's orders are for you to stay aboard." From the grins on the other fellows' faces I knew they comprehended what was taking place. Filled with rage and embarrassment I returned to the foc'sle and sat down and thought the matter over.

Weaver had evidently been given a month's pay of mine in cash, instead of the customary advance note, which, while very unusual, was due to the skipper no doubt figuring that there was small hope of my getting away, as the Petrel was so far out in the harbor and even should I get ashore there would be no way of my going far, as Port Stephens consisted of about a dozen houses, one store and postoffice, and the nearest town sixty miles away. There was no other shipping in the harbor, which was shark infested, so the skipper had apparently gambled wisely.

Until now I had been fairly contented and had made up my mind to make the trip in the barque, but the thought of being virtually held a prisoner grated on my nerves. I also remembered that Weaver had not given me any money and the few clothes I had received from him were worht but a few shillings, so that even after deducting the cost of my board and room over 50% of my month's wages remained, and this he had coolly appropriated.

I had signed the note for a month's advance on coming aboard, but had given the matter no further thought. The turn affairs had taken woke me up to the realization of how I had been skinned.

Half a month's pay gone and virtually a prisoner into the bargain. The more I thought of it the more determined I became to clear out. It was out of the question to swim ashore, and the gig the skipper used was hoisted aboard every night. Occasionally the barges that brought the logs to us laid alongside all night. As I lounged around the deck I took occasion to look over the rail was aft and its door opened toward the and inspect the barge alongside. Her house stern. A dinghy was made fast to it. I knew that the man aboard the barge would sleep with the door open as the Australian summer nights are not conducive to sleeping in a closed room. Therefore if I was going to use the boat to get ashore I would have to borrow it without asking, and do the borrowing without waking the barge keeper up.

The Petrel's watchman was one of the older seamen, and I knew that around midnight he would be in the galley making coffee for his lunch. That would be the time for me to get away I decided, so laid my plans accordingly.

Before the crew returned aboard, I had emptied my bag and selected what things I needed the most. These I tied in a bundle and placed under my mattress. Just before dark I took a look to see if the barge's dinghy was in its accustomed place. It was. I also noted that the rope ladder hung from the barque's side, so that I should have no trouble in getting down onto the barge's deck. My greatest fear was that the skipper or one of the mates might sleep on deck as the night was close and oppressive.

It seemed that the rest of the fellows would never quiet down, and I began to have fears they would still be awake when the watchman went to the galley to make his coffee. We were berthed in the forward house, and the galley adjoined the foc'sle, so I could hear the watchman when he came in.

After what seemed endless waiting, I heard him slide the galley door back and stir up the fire in the range. Quietly slipping out of my bunk I picked up my shoes and bundle and went out on deck. I peeped around the corner of the galley and when the watchman turned his back slipped past the door and hurried aft. My heart was in my mouth, for I feared any moment to hear the voice of the watchman, the skipper or mates calling on me to halt. But nothing happened and I quickly and noiselessly reached the deck of the barge.

Carefully I approached the house and stopped to listen . The door was wide open and while I could not see within I could plainly hear the snores of the keeper. Without loss of time I pulled the dinghy up to the barge and put my belongings in and then cast her adrift.

The tide was going out and as the Petrel was anchored above the town, I was soon drifting at good speed away from the barque. I dared not row for fear the noise would attract attention, so crouched in the bottom of the dinghy until a sufficient distance intervened to make this impossible. It proved to be an easy matter to row ashore and I landed on the beach a short distance from the town.

After pulling the dinghy far enough up on the beach to prevent it getting afloat, I struck into the brush a short way and laid down to sleep. Day was breaking when I

S. Y. C. Honor Roll

One hundred and fourteen members of the Southern Yacht Club have answered the call to the colors, a proud record indeed for us to unfurl a service flag bearing that number of stars.

Those members serving the colors are:

Alker, Robt.	Hansell, M. F.	Rudolf, T. R., Dr.
Allgeyer, E. E.	Hansell, F. F., Jr.	Schoen, P. J.
Bahn, C. A., Dr.	Hanson, C. C.	Schully, W. T.
Beard, L. P.	Hindermann, Frantz, Jr.	Semple, Harold
Behrman, Stanley	Holland, C. J.	Shepard, St. Mark
Bernard, Jos.	Howard, Henri	Smyth, John, Dr.
Black, Bryan	Israel, Mayer	Spangenberg, R. F.
Bobb, J. Carroll	Kahoo, M. J., Jr.	Stouse, W. P.
Borah, Wayne G.	Karst, C., Jr.	Stouse, Henry J.
Brierre, Theo.	Kuntz, Felix H.	Stream, H. H.
Carter, Reginald H., Jr.	Lally, R. C.	Taylor, Dudley
Chaffe, D. B. H., Jr.	Legendre, Folwell	Thomas, G. H. A.
Claiborne, O. V.	Legendre, Marion J.	Tolson, Gus
Coker, Jos.	Levert, G. M.	Troendle, Geo. A.
Cole, Ralston F.	Longmeire, John P.	Villere, Pierre
Colton, Harold	Luzenberg, C. C., Jr.	Vincent, Hugh E.
Dansereau, Eug. J.	Lyons, Lucien E., Jr.	Wagner, Jos. J.
Denegre, T. Bayne	Mackie, Pearl	Weckerling, John
Denny, F. Otway	Manson, J. J., Jr.	Weis, Jos. D., Dr.
Devlin, John	Marion, A. J., Jr.	White, J. M.
Devlin, Thos. J.	Marone, C. A.	White, R. Emmet
Dicks, Geo.	Mathews, Wm. H., Jr.	Whitmire, R. L., Dr.
Fenner, E. D., Dr.	Nathan, Harrold P.	Whitney, Nelson
Finley, Leonard M.	Neely, Chas.	Williams, J. Cuthbert
Finley, Edw.	Newman, Hart D.	Wood, E. E., Jr.
Flaspoller, Tuttle	O'Donnell, Peter	Woody, Nelson
Frantz, L. C., Jr.	O'Donnell, Wm. L.	Woolfolk, A. Wheeler
Freeman, David	Pardue, Sherman	Wynne, C. M.
Furr, C. C.	Penick, Wm. E.	Young, P. St. Amand
Gauche, Raymond	Perrier, Theo. L.	Forstall, Gerald J.
Gillispie, Jno. J.	Pfeifer, Frank	Irwin, Michael, Jr.
Gladden, Adley, Dr.	Pinac, Edy, G.	Aschaffenberg, E. Lyle
Gladney, J. Bonner	Provosty, Michel	Dane, John
Goldstein, L. S.	Prudhomme, R.	Ewing, John D.
Gragard, Thos. (killed in action)	Reilly, Leo	Dinnellisa, Geo. A.
Grant, Walter K.	Ritter, W. T.	Lesesne, Lucien
Green, Chester	Robert, Geo.	McKinney, C.
Groves, Frank	Rowbothan, G. W.	Foley, Thos. (died in camp)

An example of the way New Orleans yachtsmen are helping win the war

awoke. I realized that there would be a search made for me, and so picking up my bundle I tramped deeper into the woods and away from the town.

Apparently I had struck an uninhabited stretch of country, or part of an immense estate as it was near sundown before I came to a road. By this time I was desperately hungry, not having eaten anything since the night before. As I stood undecided whether to walk down the road or keep to the brush, the noise of an approaching wagon reached me. Stepping behind a tree I watched the bend of the road until it came in sight. The driver was singing at the top of his voice and apparently so engrossed in his song that he would have undoubtedly passed me by had it not been for his horse's shying.

"You're the runaway sailor, aren't you?" was his greeting. I nodded affirmatively, as I debated whether I could place any confidence in him. His clothes were somewhat tattered, his face was heavily bearded, but the twinkling blue eyes that looked out from the mass of hair had a gleam of humorous sympathy in them that plainly pronounced him a friend.

"Well, they're looking for you," he continued, "and if you stay on this road they will sure get you. Better come along with me."

So onto the seat beside him I clambered, and as we proceeded, under his skillful questioning I told him the story of my troubles.

About a mile up the road we branched off into a heavily wooded lane and he informed me that at its end his farm was located. He also told me that on his arrival in Port Stephens that morning he had found the skipper running about excitedly and inquiring if anyone had seen anything of me. Of course nobody had, which did not improve his temper, and he thereupon called on the lone policeman, who was stationed there, to aid in my capture.

My farmer friend, it appeared, was clearing land and needed help for a couple of weeks. If I would aid him he promised me in return my board and room and a few shillings. Nobody ever visited his place, he assured me and I would therefore be quite safe. I accepted his offer gladly.

It was nearly dark when we arrived at his farm. His wife and children met us. Early next morning we started into the woods armed with axes and shovels and commenced clearing the land. It was hard work, but different to anything I had ever done before and I enjoyed it.

Three weeks passed and the job came to an end. Apparently there was only one thing left for me to do and that was to walk to Newcastle, nearly sixty miles away. I had planned on walking nights and sleeping in the daytime to prevent discovery.

The farmer made a trip to Port Stephens on the day I expected to start, and promised to bring me back several things of which I was in need. Upon his return he told me the Petrel was still in port, but that a small ketch had also arrived within the last week and that she expected to sail the next day for Sydney.

The hike to Newcastle did not appeal to me, and I determined to risk going into Port Stephens and see if there was any way of getting aboard the ketch and stowing away.

It was about nine o'clock when I arrived at the edge of the town, and carefully avoiding the short street which ran through its center, I made my way to the wharf. I could see the Petrel's lights and also those of the ketch. The latter lay anchored directly opposite and but a short distance from the dock. There was no one about so I walked down to the end of the wharf and looked around. A small shed had been erected on it, apparently more for shelter than anything else. Keeping in its shadow I stood and tried to figure out the best way to get out to the ketch. The silence was broken by the splash of oars and I saw the outline of a boat approaching from the direction of the barque. I lost no time in getting behind the shed and hardly had done so before she came alongside. Apparently the skipper was ashore and the boat had been told to meet him.

The two members of the crew, however, did not come on the dock, but lounged in the boat, for which I was truly thankful. A few minutes later I caught the sound of the skipper's footsteps approaching, and I squeezed against the wall and held my breath which was a foolish proceeding, as he would have had to have a light to discover me as the shadows in which I was standing were so deep.

A few words in German passed between him and the men in the boat and a moment later they pushed off. The noise of their oars had scarcely died away when I caught the sound of another boat approaching from the direction of the ketch. It was a boy of about my own age who clambered up from it onto the dock. I hesitated a second to see if he was alone and not hearing or seeing any signs of anybody else, stepped out of my place of concealment and said "Hullo."

He was somewhat startled by my sudden appearance, but managed to return my greeting. I lost no time in telling him of my predicament and asked him bluntly as to the chance of working my passage aboard the ketch. He listened with interest, but shook his head at my suggestion of working my passage. "The skipper's my uncle and I doubt if he'd let you. He would be more likely to turn you over to the Petrel," he said.

I was keenly disappointed and he saw it. "Here perk up," he continued after a moment's thought. "I've got a plan. I'll stow you away. You can get down the forward hatch and lay on the lumber. We'll sail this tide. Come on, hurry and I'll pull you out to the ketch." "But," I protested, "won't someone on board see us?" "No," he rejoined, "my uncle and the two other fellows are ashore. I have to meet them around ten o'clock, and there's time to get out to the ketch and back."

The row was a short one, and a few minutes later I found myself on the lumber piled deck of the ketch. Without loss of time my guide took me up forward and together we pried off the hatch cover.

"Wait a minute," he commanded as I looked down into the darkness of the hold, "I'll get a light."

He not only brought back a light, but also some water in a can. Grub I had in my bundle in the shape of sandwiches. which I had got from the farm when leaving.

There was just enough room for me to crawl back under the deck, and having stowed myself as comfortable as possible, I began to lay plans as to what I should do on arriving in Sydney, which place the ketch was expected to reach in about forty-eight hours. The noise of tramping feet overhead and the sound of voices apprised me of the fact that the skipper and crew had arrived. When we sailed, I had no idea, as I fell asleep waiting to hear the sounds of getting under way.

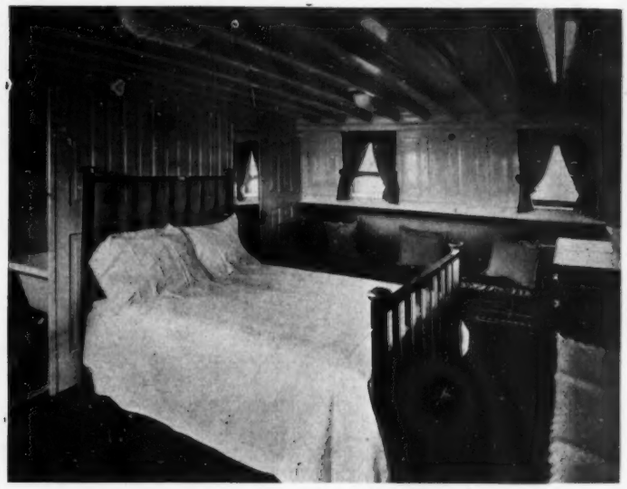
The forty-eight hours I spent in that hold seemed like forty-eight days. The ketch rolled and pitched, and the bad air and motion nearly made me seasick. I was in a doze when my friend lifted the hatch and called to me to come on deck. It did not take me long to crawl out, and how good the air felt. I inhaled great mouthfuls of it. The lights of the city were all ablaze and life seemed worth living again. The ketch was alongside a lumber dock, and had arrived about four o'clock that afternoon. Everybody had just gone ashore, and as it was a trifle after eight o'clock, I had ample time to get up town and stretch my legs and secure a square meal.

Thanks of any kind my benefactor would have none, and I left him with the sincere desire of getting better acquainted at a future date. I secured a berth before noon next day, but it was not on a deepwater windjammer, and while the time eventually came that I did make several trips in such craft, they did not fly the German flag.

A PEEP BELOW AMERICAN

SOMEONE once wrote a bit of verse. Is this part of it? "'We are lost!' the captain shouted, as he staggered down the stairs." Some fool captain that! I wonder if the stairs he staggered down were these? Couldn't have been though, for these are in a well known motor cruiser and this well known craft is powered with a Standard motor and every one knows that, blow high or low, that kind of a motor is so dependable that the boat is sure to reach port safely and without giving the captain, crew or passengers cold feet either.

"WHEN the day is done and the shadows fall, etc." always reminds one of bed. Now there are all kinds of beds, and bedrooms, but for a real sleep can there be anything better than a white panelled stateroom, a well secured metal bed, and the breath of the salt sea wafting through the cabin windows?

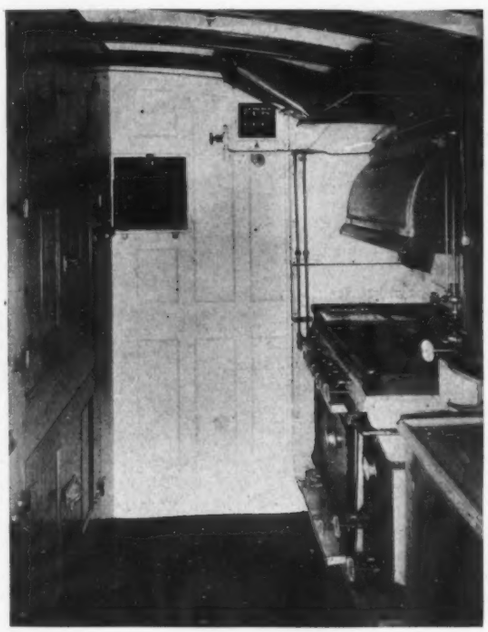


LIKE the interior of some old world feudal castle the interior herewith suggests secret panels, hidden trap-doors, and well worn slides that lead into a darkened archway somewhere deep beneath the moat.

But those dark imaginings are soon forgotten when one draws aside a perfumed curtain and looks out upon a peaceful bay set with the cream white sails of the yachting fleet. It's only the smoking room of an American Yacht.

DECKS OF SOME YACHTS

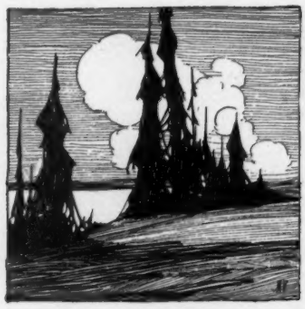
SPEAKING of cooking—well few of us know "how to" but all of us know "when" things *are* properly cooked. The galley seems a prosaic outfit and, quite true, dirty dishes are taboo in polite society, but for all o' that a good stove, a good galley sink, a good ice-box and a good cook are half the pleasures of going cruising—so look to the galley. The best here is none too good.



SOMEHOW a small yacht's cabin is the snuggest abode. Perhaps it is because the tinyness of its dimensions creates closer intimacy and thus makes it a bit of ourselves. Or is it the low head room, the side bunks, the small doors and windows or port holes that lend a suggestion of the primitive home? Lord knows though, the small cabin on any day with a book or two, and a pipe, *is* a pleasant place to be.

IN the smaller yachts one snuggles to sleep in a built-in bunk half under the side deck. To attain compactness drawers are fitted under the springs for the stowage of clothes, extra blankets and things. In some of these miniature rooms folding wash basins are fitted and every nook and cranny is utilized for adding comfort when cruising.

The bureau here is built-in and its mahogany top and front lend charm to an already pleasing room.



The Log of an Inland Cruise in 1817

Being the Voyage of Thomas Dean Through the Inland Waterways of the Middle West

Continued from September YACHTING

VOYAGE FROM FORT HARRISON TO THE MOUTH OF THE MISSISSINEWA RIVER AND RETURN

August 20th, 1817. We sold some of our axes, settled our bills, prepared to start, and settled with Jacob Dick. Paid him $25.06 toward helping him to defray the expense of the treaty, and I made Sarah (his wife) some other presents. We started at about 4 P. M. and Truman Ford went with us to Brouillets Creek. At dark we all lay in the boat until morning. It is eight or nine miles from the fort.

August 21st. Ford gave me some ore to have tested. We started early in the morning, went up the river as fast as we could. There were four or five canoes, containing about twenty-two Indians, in sight. They were still in sight in the afternoon. At night we put up on a bank and the canoes all passed us. We supposed that we came about twenty-five miles this day. We lodged in the boat.

August 22d. We started early in the morning, went up the river, and about 12 o'clock came to a coal bank. Went to examine it; found the different courses to be about sixteen or eighteen feet deep and of a long extent. We took some of the coal to carry home, but we had it from the surface and with it some kind of ore, etc. In going on we passed the Indians that had passed us the night before. Went up the river until night, we supposed about twenty-three miles. It thundreed and looked as if it would rain. We covered our boat and prepared for night to lodge on board, and it soon began to rain. The mosquitoes were so very troublesome that we could not even rest, much less sleep, and it rained all night very hard, with much thunder and lightning. The Indians in the canoes were on a beach, drinking. We passed them about noon and some came on after us, but we saw them no more.

August 23d. As we could not sleep, and being wet, we started as soon as it was light, went on up the river, past some very handsome prairies and bluffs, one of which we went onto in the morning. It was high land and thin timbered. We passed several small streams and creeks and we went, we supposed, twenty-three or twenty-four miles. Went on shore for the night, lodged on board. It was clear and very cool.

August 24th. Went up the river and on our way came to a settlement of Indians near a prairie which we supposed was Tippecanoe. We obtained some soft corn from them to boil and gave them salt, then went on. In the afternoon we came to a high, rocky bluff and went up onto it. It was sand rock. We could see a great way and over large prairie ground. We went on until we came to the prairie. Went up on the bank, but the weeds were so high that it was difficult to see the grassy path of the prairie, and we went on until we stopped for the night. Then we passed through the weeds, which were seven or eight feet high and very thick, until we came to the grass, which was fifty or sixty rods. We went out a half mile on the rise of ground, but could not see to the farther side of the prairie. It is on the east side of the river. Lodged in the boat. The weather was cool. We supposed that we came twenty-three or twenty-four miles.

August 25th. We went on up the river and passed some prairie, and in the afternoon came to one on the west side; saw a large piece of high land near the prairie that had been cleared off, and it appeared as if it had been settled, which I suppose was Tippecanoe. We continued until after dark and put up on a beach at the mouth of a large creek, which is the Tippecanoe branch or West Branch. I suppose we came twenty miles.

August 26th. We started early in the morning, and, passing on, saw some wild turkeys on the trees. We shot two; they were young and made us a fine breakfast. We now came to rocky shores and soon came to a prairie on the west side where some Indians lived, by swift and shoal water. We supposed that it was Mississinewa. We spoke with some, but could not understand them much, but they signified that it was farther up the river. It looked like a fine prairie. We went on, but soon found that our trouble was beginning, for the water grew shallow very fast and the current stronger. We passed up some very swift water, but it was deep enough for our boat. we passed two islands opposite one another and went between them. It being near night, went on a little farther and put up on a small willow island. Lodged on board, as it is the most comfortable place in this wild place. We came today sixteen or eighteen miles.

August 27th. We started early in the morning and about 8 o'clock came to an Indian village. They hailed us to come on shore and wanted whiskey. We informed them we had none for them. They wanted tobacco, which we gave them. We let them have some powder and salt. We received corn to boil, and some deer skins. We did not want to part with our salt, but they insisted on having it, and we let them have one pint of salt for one skin. They wanted to trade more than that, but we told them we could not, and started to go, but a woman brought three muskrat skins for a pint of salt. We then put out and were called on the other shore by some on the bank who wanted whiskey, tobacco, salt, etc. We gave them some and went on, and were called again, but we didn't stop, but continued up the river one or two miles and took breakfast. Two Indians followed us with two deer skins and wanted whiskey, tobacco or powder, but we told them we could not trade. We had nothing with which to pay for them and did not want them. They saw our fish spear, and wanted that, so I let them have one spear, some salt, and a little tobacco. We went on our way, and after going two or three miles through swift water, came to a rocky shoal where the river was very wide, the bottom a rock, so that the water was not more than six or eight inches deep, and in many places not more than three or four inches. We took out our baggage, carried it 200 or 300 yards on our shoulders, drew up our boat, and loaded in our goods. Were about four hours in going about half a mile. Continued on over rocky bottom and shallow water four or five miles until night. We came to strong rapids or falls. The water falls three or four feet in about fifteen rods. We examined the passage and arranged to put

up for the night, deciding not to attempt to go up until morning. An Indian went up with his canoe on the west shore around the bend. He towed his canoe. There was not water enough for our boat. We came about ten miles this day and lay on the west side of the river.

August 28th. We unloaded our boat early in the morning, carried our baggage seventy or eighty rods up the west shore, then crossed over to the east shore, towed the boat up the rapids, crossed over, took in our things, proceeded up over a rocky bottom and much shoal water that we often had to be out to lift and shove her up fifty or 100 rods in a place. Our passage was thus very slow and tedious, but we found the channel without much difficulty, where there was any, but the river was wide. It spread over a wide, flat rock. About half past 3 P. M. we came to the forks of the rivers, which we supposed were the Mississinewa and Wabash. One came in from the north and the other from the northeast. The latter we thought was the Mississinewa, but it contained more water than the other, which was different from the information we had received. Paul Dick went up the north branch and R. Fowler the other. When R. Fowler returned he said he thought we could not go up that branch, if it was the Wabash. Paul returned and said that the northeast branch was impassable, that the water was very shallow, there were falls in it of two or three feet perpendicular. It began to grow dark, looked like rain; we concluded to fall down the river sixty or seventy rods to an old shelter that was made by the Indians for hunting, and left by them, where we put up for the night. R. Fowler, Paul Dick, and I lodged on shore under shelter. We made a little fire. We came about five or six miles this day.

August 29th. This morning I awoke at about 2 o'clock and put out the fire, laid down again, went to sleep. I had a remarkable dream which agitated me very much. It brought to me the situation of my family, and the state of my affairs in which I left them. The imprudence of leaving home on such a journey without first settling all of my affairs; that they would lose greatly in case of my never returning to them again. The contents of my dream agitated me so that I could not eat much breakfast. I may write it down when I have more leisure, but I must note our situation this morning. Paul and R. Fowler again went out up the northeast branch, along an old path, to find a settlement of Indians, or to see if we could go up the river. They returned and said that they thought our passage up at an end; if we went any farther we would lose the boat and all the baggage we could not carry. We held a council to decide whether we should risk the sacrifice or return to Fort Harrison and there dispose of what we could, and then go by land. Thomas Isaac was in favor of going up the river as far as we could, and try the experiment. The rest were for returning. Betsy Isaac was unwell with the ague and fever, quite feeble, and it was difficult to provide a passage for her. Thomas started to examine the northeast branch after breakfast and returned about 1 o'clock P. M. and said that he went up the east branch about eight miles and thought that we could not get up. We then concluded to return to Fort Harrison, sell our boat and what baggage we could not carry on our backs, go across the country through the woods. We took some bread and sassafras tea, the only food we had that we could eat. Our pork was spoiled so that we could not eat it, but I made a comfortable repast; then we started about 2 P. M. down the river. The water in the river was falling, although it appeared low, we had frequently to get out and lift the boat along over the shoal places, but we got along without much difficulty and passed the falls or rapids by leading the boat. This is what I called the Wapanoke Dread, and we ran down to within three-quarters of a mile of the Wapanoke, where there are shoal rocky rapids and there we made our boat fast on shore, and laid down to rest, it being a fine, pleasant evening.

August 30th. Early in the morning we went down the rapids without much difficulty by passing behind a small island, clearing away the rocks, lifting and shoving the boat along, and we came down to the settlement of the Indians before mentioned when going up. They are the Pottawottomis and we got a large piece of venison, some corn, a few beans, and let them have some more salt. We traded a little salt for five muskrat skins, and then went on down. The water had fallen so that we had to wade and shove our boat at places that were clear when we went up. We went down two or three miles, then stopped to cook our corn and venison and take breakfast.

R. Fowler complained of being chilly and unwell. He took breakfast, then we proceeded down the river, not without some difficulty. The water was much lower than when we went up. We pushed on as fast as we could, and R. Fowler grew worse, so that by 1 o'clock he lay down. He had a most violent pain in his head and back, and I thought some symptoms of fever approaching, but we were in a poor situation to administer proper medicine. He could take no food of any kind. We continued on until dark with the expectation of getting to the place where we stopped when we went up, but could not, so went on shore, made some tea of thoroughwort or boneset, and gave him a strong draught. Then I gave him some Lee pills and we prepared for rest on board.

August 31st. This morning up by day, and found R. Fowler more comfortable, though very poorly. He rested but poorly. I could often hear him groan in the night, and I was fearful that a fever would ensue. I proposed giving him an emetic, but he declined for fear of the cramp, which he said he was subject to at such times. He could take no food. We made him tea of summer savory, the only palatable herb we had on board. We baked some cakes and took breakfast on the river floating down We continued to sail down until after noon, when R. Fowler became so sick that we went on shore at the Great Prairie, where we put up on the night of the 24th. We made him some thoroughwort tea. He drank a good dose of it, and it worked well. Then we went on until night, put up by the shore, and boiled some rice for Fowler. Betsy Isaac was also sick.

September 1st. This morning R. Fowler was some better. We started about sunrise and went down a few miles below where we stayed on the night of the 23d, went on shore, ate breakfast, and Fowler ate some of his rice. We continued down the river as fast as we could when Fowler began to grow worse, and in the afternoon he was in extreme pain in his head and back. I would have given him a dose of medicine, but he declined taking any; but now he was willing to take one of ipecac, but his stomach was so empty that I thought it improper unless we had something to nourish him after it had operated. We were destitute of provisions, being nearly out, except flour and some potatoes. His distress increased so toward night we had to stop before sundown; warmed some water and soaked his feet, made him some tea of the root of sassafras, and gave him a drink. We had one onion on board. I applied that to his feet as a draft. We stayed here until morning, it being some distance below where we stayed on the night of the 22d when going up.

September 2d. We started this morning as soon as it was light, in hopes of getting to the fort by night. Fowler was much better and seemed comfortable, though very weak. We passed the coal bank mentioned before. I went on shore and got some pieces of coal. We ate what little potatoes and cake we had cooked and went on down the river. Our meat being all gone, and forty or fifty miles to go, we tried to get a fish. I struck a fish with the boat pole that would weigh five or six pounds. This was near where we stayed on the night of the 21st. We passed the mouth of Sugar Creek. Went on shore and took dinner, three or four miles below the creek. About 12 o'clock R.

Game in these old days was plentiful; fish swarmed the rivers, and one found a living hanging on the scenery, so to speak.

Fowler began to grow worse and the pain returned with much violence. I put camphor on his head and we made him some more tea when we took dinner at about 2 P. M., then ran down below Raccoon Creek and put up for the night.

September 3d. In the morning we arrived at Fort Harrison about 10 A. M., unloaded our boat, and began to prepare for our journey across the woods, but could not sell our boat, as we wanted to.

Journey from Fort Harrison to Fort Wayne

September 4th, 1817. We arranged for starting, but could not sell our boat. We collected our things as fast as possible; tried to sell the boat and buy a horse, but could not do so. I sold the six axes, seven hoes and the skins for $25.

September 5th. We sold the boat to Captain Brutt, but did not get ready to start. R. Fowler was still sick. We concluded to leave him with money to buy a horse when he got well.

September 6th. We waited until the next morning. I sold my chest and other things and left about $100 with R. Fowler, besides what he already had.

September 7th. We started in the afternoon and proceeded out onto the prairie about six miles, when it was dark. We laid down for the night, and it was uncomfortable through the night.

September 8th. This morning it rained some. Our pack was so heavy that it made it very hard to get along, and my feet began to be sore. We arrived at Adams about 9 o'clock and got breakfast; tried to get a horse. It rained, so we concluded to stay until morning. I paid 75 cents for our breakfast.

September 9th. It was a very rainy night, and rained hard the fore part of the day, so that we could not start. In the afternoon we went to get the horses ready to start in the morning as soon as we could, if the river was not too high. We had the promise of two horses and I agreed with an Indian for one horse to go to Corezeketon (Wea Village) for $2. Paul and Thomas stayed all night. I paid Adams $1 for being there two nights and days.

September 10th. The weather this morning looked more favorable, though some cloudy. Paul and Thomas returned and said the man was coming with his horse, but we must have some one to go with him so as to have company to return with him. Adams did not want to go, so we could not get any help. We started about 8 A. M. and went on about one mile and came to an Indian camp where there were six Indians. We could get no horse from them. They were going our way, and started immediately. We followed. Paul forgot his powder horn and had to go back after it. Thomas carried his pack and I his gun. The Indians left us.

We went on to Racoon Creek. It was very high, so that we could not get across. I shot a turkey on the other side, but we could not get to it. We then went up the creek to find a passage. I shot a deer, but it fell on the opposite side. The river was so deep and wide that it went down. Paul stripped and tried to ford, but it was too deep and swift, so we lost the deer. We then went up the creek through the weeds and bushes and over some bad gulfs until we were fatigued, and then turned off to the east to get on the track of the Indians, who had taken an unusual route to avoid the main creek. We overtook them near night, when they had camped, they having one in their company who was sick. We made a fire and camped near them. We came ten or twelve miles. We had in company with us a man by the name of Peleg Tabor, belonging to Onondaga, who wanted to go through with us.

September 11th. This morning the Indians agreed to let us have one horse for $1, which I gave for the day. We put two packs on the horse and Thomas rode in the forenoon and I in the afternoon. They took the other two packs, and we traveled hard through brush, winding hills, etc., and crossing some large streams and arrived at the head of Raccoon Creek near night and encamped close to the village. I paid 25 cents for venison and $1 to Peter Cornstalk for the use of his horse. On the way the Indian killed three turkeys.

September 12th. We secured two horses from the Indians to go to the Wea town, where they were going. I paid them $2 for the two and we traveled rapidly. Paul and I took turns riding and Thomas rode the other horse. We had very bad traveling. The mud and water in many places was up to our knees, and some creeks were deep, the water being very high. We arrived at the Wea town near night and went to Longlewy to encamp. He informed us he was going to start in the morning for Detroit, and would supply us with two horses in the morning to go to Mississinewa, if he could.

September 13th. In the morning I went up to the Indian that I had hired the horses from yesterday, to get two to go to Mississinewa, and he went with me to our quarters, but would not go without $10. I agreed with Longlewy for two horses to go to Mississinewa for $5. I paid him $1 for our breakfast. We started about 12 o'clock. Thomas and I rode. Paul and Peleg went first, on foot, we taking the packs. We went over a very fine county of land and crossed Sugar Creek. It was very high. We went twelve miles and came to a prairie which extends to the White River. It was about four miles across, and we went some distance into the woods and encamped under a shelter of some bark. Longlewy and his wife, a goodlooking Indian woman, and two little boys encamped near us with their tent. The air was very cold and it looked like rain. We came about eighteen miles.

September 14th. This morning it began to rain at about 2 o'clock A. M., but the bark sheltered us. We ate some bread and a little meat and started about 7 o'clock in the morning. The bushes and weeds being very wet, and as it was raining some, it was very muddy and bad traveling. The creeks were high, some of them so deep as to wet the packs on our horses. Our friend Longlewy killed a raccoon, but it lodged in the tree and he could not get it down. Towards night his dog treed a small one, which his boy shot. We went on until near sundown and camped in the woods. Being wet and cold, we made a large fire, got some bark and made a shelter, dried ourselves as well as we could, and prepared for sleep. I suppose we came this day about thirty-two miles.

September 15th. It continues cloudy and some rain, though we lodged dry in our shelter. We started about 7 o'clock and went on through good land, but a very muddy road, and crossed several streams of water, but none very large except Wild Cat Creek, which we crossed about 1 o'clock P. M. We went on until about 5 o'clock and encamped within about six miles of Mississinewa. Our provisions were all gone. We ate our last piece of bread at the Wild Cat Creek. Our friend Longlewy killed another raccoon, of which they gave us some. We came about twenty-two miles this day and made a shelter with a piece of cloth of Longlewy's, and our bed of weeds.

September 16th. This morning was clear, and I was up by the break of day, dried my things, which were wet by the rain and crossing deep water. We had a little of the raccoon and some boiled corn to eat; started about half past 7 A. M., went down to the village, crossed the river, and went about one and one-fourth miles, where we stopped at a house of a mixture of half French and Indians. Here I paid Longlewy $5 and he went on his way to Detroit. We could get nothing to eat here but soft corn to take with us for food. We obtained fifty or sixty ears of corn and gave 50 cents. I prevailed on the Indians to let each of us have a piece of bread, and we got some sassafras tea. I had agreed with an Indian for two horses to go with us to Fort Wayne for $6, and we waited until in the afternoon for him to come, but he sent word that he would not go under $8. I could get no other Indian or horse to go, so we shouldered our packs, as heavy as they were, and started about half past 1 o'clock, went up the river about twelve miles, and crossed it. It was two or three feet deep. We went about three or four miles, made a fire about sundown, and encamped on some leaves. Peleg Tabor came up with us about dark, we having outwalked him. It was clear and pleasant, but lightened in the evening and thundered at a distance. We roasted some corn and ate it for supper.

September 17th. We were up early in the morning and roasted corn for our breakfast. It was cloudy and had the appearance of rain; it thundered hard. We started about

(Continued on page 156)

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Making Your Compass Tell the Truth

PART I

Taking Sun's Bearings by Pelorus Not Nearly So Involved as It Sounds—How to Make a Pelorus of Cardboard that Will Do All the Work of a $75 Instrument—and If Your Watch Stops, You Can Set It Within a Minute by the Shadow of the Thread—An Introduction to a Fascinating Branch of Seamanship.

By HENRY M. NEELY

ALL compasses are liars.

That is, all compasses point somewhere else when the men who bought them imagine that they are pointing true north.

As a matter of strict accuracy, that is the fault of the men and not of the compasses. What the compass really says to the man who understands it, is, "This is the direction of the sum of all the magnetic influences acting upon me."

And, considered in that light, the compass is not so much of a liar after all.

The whole earth and its inhabitants seem leagued together to keep the compass from pointing to the true north pole. In the first place, the center of the earth's magnetic attraction is not at the real pole but is slewed some distance off to one side of it. It is this magnetic pole that attracts the north point of the compass and therefore the compass points to it and more or less to one side of true north. Magnetism, being thus cut on the bias, as your wife might put it, the result is that the lines of magnetic forces all the way down from the pole, across the equator and on down to the south magnetic pole, twist and turn in the most remarkable way. And almost everywhere, these varying magnetic forces pull the north point of the compass to a greater or less extent to one side or the other of true north.

This is called *variation*—the magnetic forces of the earth acting upon the magnets of the compass.

There are lines of "no variation" where, without other influences, the compass will point true north. Such a line runs from the coast of South America, up between Haiti and Cuba and hits our coast just below Savannah, Ga. That is, the line is there now. But, to make things more complex, all these lines, or zones, of variation are changing every year, the change in the vicinity of this *no variation* line being about three minutes of arc annually, so that, 20 years from now, it will be a degree out of plumb.

Even on this *no variation* line, however, the compass on your boat would not point true north. There are influences within the boat itself which pull it or push it out of line.

Almost all metals—brass and bronze are exceptions—have very strong magnetic properties. Put a monkey wrench or a big pair of pliers near your compass and see for yourself. Lay your Stillson across the binnacle and watch the north point of the card get excited.

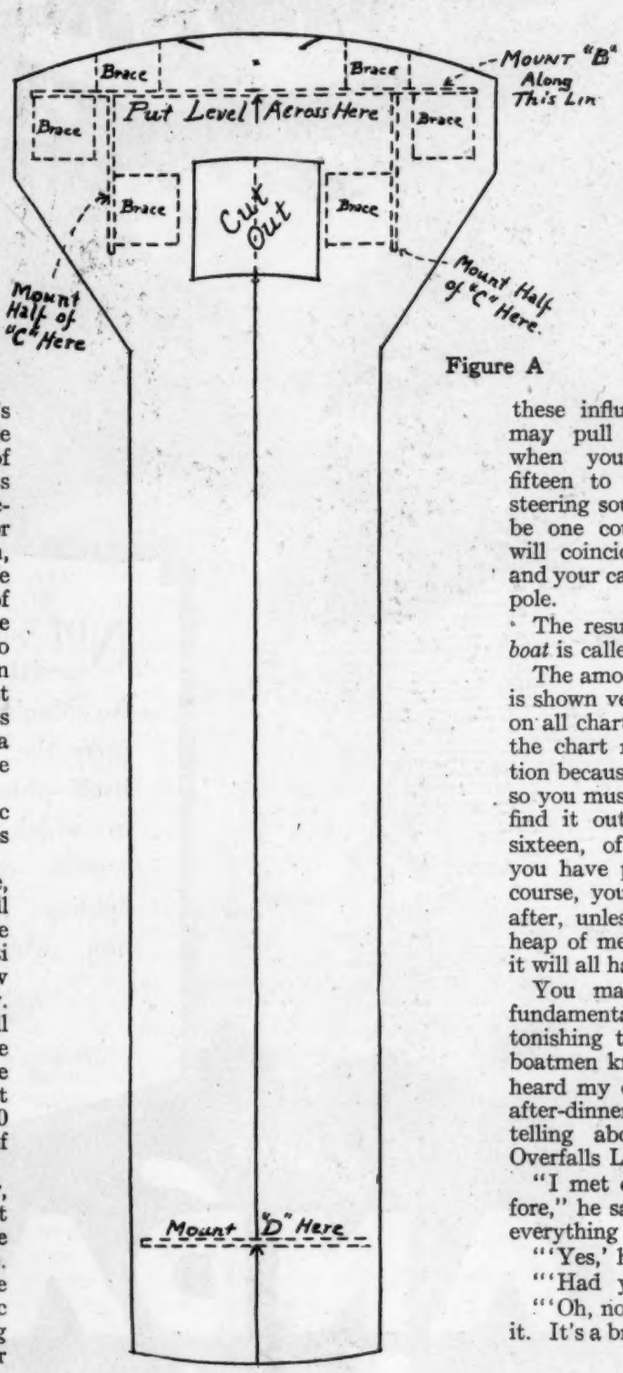

Figure A

You cannot see these influences nor calculate them in advance but all the metal on your boat—engine, rudder and post, wheel, awning frames and stanchions—is united in a propaganda of anti-north-polarity that may run you ashore in a fog unless you know just how much to allow for it. And on each bearing of your boat, the effect of these influences will be different. They may pull the compass six degrees out when you are steering nor'east and fifteen to twenty degrees when you are steering sou'east and then again there may be one course on which these influences will coincide with the earth's magnetism and your card will point to the real magnetic pole.

The result of these influences *within the boat* is called *deviation*.

The amount you must allow for variation is shown very clearly by the varaition lines on all charts or by the compass roses. But the chart maker cannot figure out deviation because it is different on each boat and so you must find out yours for yourself and find it out on at least eight, or, better, sixteen, of your compass points. Once you have proved just what it is on each course, you can always allow for it thereafter, unless you later stow away another heap of metal on your boat. In that case, it will all have to be done over again.

You may have heard all these very fundamental facts before, but it is astonishing to learn how little most motorboatmen know about the compass. I once heard my old friend, *Doc* Street, make an after-dinner speech at a yacht club. He was telling about the preparations for the Overfalls Lightship race.

"I met one of the boys a few days before," he said, "and I asked him if he had everything in readiness.

"'Yes,' he replied.

"'Had your compass compensated?'

"'Oh, no,' he answered. 'It doesn't need it. It's a brand new one!"

(Continued on page 142)

The Very Stuff of Victory

The materialist has said buying Liberty Bonds signifies nothing.

He looks upon each issue as representing an investment which has no equal today in all the world.

Consequently, he views their purchase as involving no sacrifice nor deserving of credit. As far as his vision lets him see he is right. But unfortunate is he, indeed, who cannot look beyond the simple action and recognize the full power of the motive.

That these bonds are the greatest investment in the world may rightly be laid at the feet of good fortune, because they are *the promise-to-pay-with-interest of the greatest government in the world,* backed by the most tremendous resources in the world.

Such, however, is not the great overwhelming and impelling reason that millions of red-white-and-blue men and women now own billions of dollars of Liberty Bonds and in this Fourth Liberty Loan are subscribing for billions more.

The motive is a far deeper one. It transcends all material considerations and its fabric is the very stuff of victory.

For Liberty Bonds to the great host of American men and women represent work accomplished, thrift acquired, money saved and devoted without stint or limit to that greatest purpose which shall finally achieve victory over organized force inimical to the peace of the world.

So when your dollars are invested in United States Government Bonds of the Fourth Liberty Loan, though they are invested in the *most wonderful investment in the world,* they become more than ordinary dollars because they are then the concrete expression of a hallowed purpose and dedicated to its achievement, the very stuff of victory.

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And, in all that gathering of 150 motorboatmen, there was not even a ripple of laughter to greet the yarn. The diners knew no more about compasses than Doc's friend did.

With all these preliminary A B C's of the compass disposed of, I want to pass on to you a simple little outfit that I devised this past winter because I was too stingy to pay the $75 asked by a nautical instrument house for a much more elaborate instrument which wasn't a bit better for motor boat work.

The instrument is known as the pelorus. No, don't get up and go away mad. A pelorus is not nearly so formidable as it sounds. In fact it is very easily tamed and can be taught to sit up and beg for its meals in two or three lessons.

And the pelorus and its twin brother, the azimuth, are two of the most amusing and instructive pets in the world to have aboard the little old packet.

Stated simply, a pelorus is nothing but an instrument to show exactly where the sun is. It is also used for other heavenly bodies and for other purposes, but we are at present interested in it only with relation to the compass and the sun. So the pelorus shows exactly where the sun is.

Its twin brother, the azimuth, is (for our purposes again) merely the name given by scientific sharks for the distance that the sun is away from true north—not magnetic north, mind you, but the true, honest-to-goodness north pole.

If, by means of the shadow of the thread in the pelorus, we find that the sun is southeast of us, we say that its azimuth is north, 135 degrees east; if it is due west, we call its azimuth north, 90 degrees west. No matter where it is on the compass card, its azimuth in this hemisphere is north, so many degrees east or west—east in the morning and west in the afternoon.

Astronomers have been shipmates with the sun for a good many generations now and so they know its habits pretty well. And, while he goes on his own way without much regard for clocks, he does seem to have a good deal of respect for the calendar and, on every day of the year at any minute—as the sun counts minutes, mind you; not as your watch counts them—you will find him

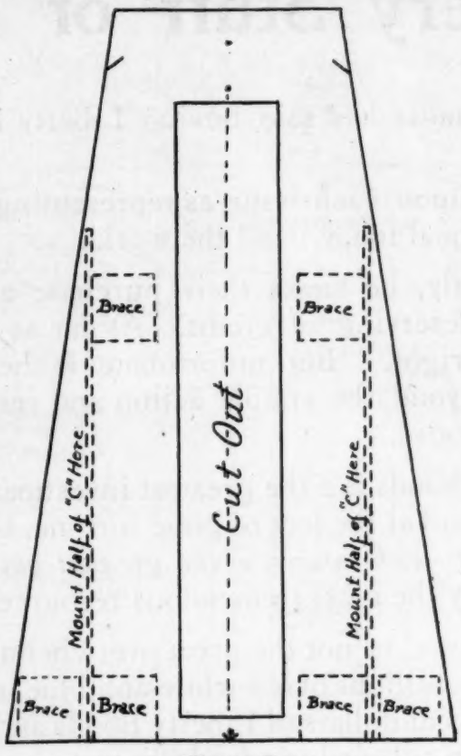


Figure B

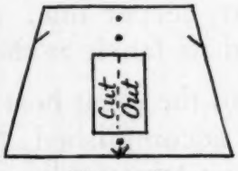
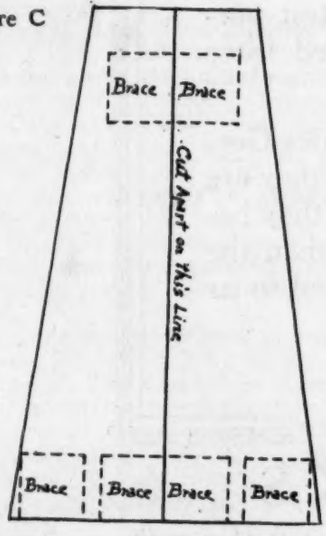


Figure D

Figure C



in exactly thesa me place. Not nearly the in same place but in exactly the same place, down to the fraction of a minute of arc.

So regular in his habits is he that his bunkies, the astronomers, are safe in staking a year's salary that, on June 10th, for instance, at ten minutes of eleven in the morning, sun time (which is called apparent time, and is easy to figure from your watch) a man in New York will see the sun exactly north 135 degrees 26 minutes east. And the pelorus—even this home-made one that I am going to tell you about—will show this azimuth so clearly that no one can mistake it.

To get this result, you don't have to go through a lot of intricate calculations. It has all been done for you and published by the government in a set of tables. Given your latitude, and your date, you enter the tables with the apparent, or sun's, time on one side, follow it across to the column under the date and there is your azimuth. This is simple enough, isn't it?

With this infallible guide to the true north pole, you can stand, watch in hand, by the pelorus on the great little ship just as tide is swinging some early spring day, have your shipmate at the compass to sing out the points to you when you call for them, give him—or is it her?—the word every four or ten minutes, depending on which set of tables you use, and, in two or three changes of tide, you will have your deviation card complete.

You will know then and thereafter exactly what your compass means when it says nor' nor'east a half east and, if it really means nor'east a quarter nor', you will steer accordingly.

For there are two facts that simplify all of these calculations. One is that variation is pretty well tamed by now and follows the exact figures put down for it on the charts. The other is that the deviation in your motor boat will remain fairly constant through the summer providing you don't cruise through too wide a change in latitude.

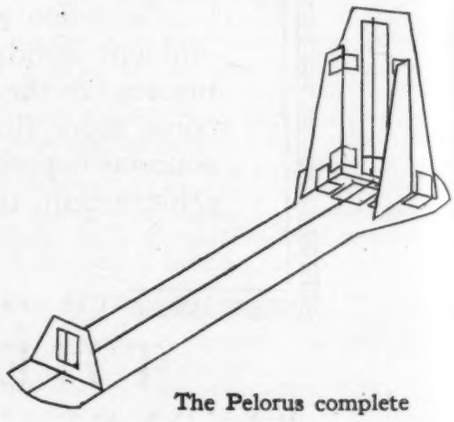
To be on the safe side, however, it is well to adopt ship's practice and take an azimuth for compass error at sunset every day and whenever you put the packet on a long course. You will not find this a burden. It is, on the contrary, a fascinating part of boating life and, once you get the hang of it, you will be taking bearings of the stars and figuring out right ascensions of the meridian, and hour angles and talking learnedly about the eccentricity of the earth's orbit and the precession of the equinox. You will, really. It becomes an absorbing study and this little instrument to which I want to introduce you will be the best kind of beginning.

In the first place, this talk differs from the usual "how-to-make-a" article in two important particulars.

First: the material required is not more costly than the purchased article would be. What you need for this home-made pelorus is some heavy cardboard such as artists use, some glue, a needle and thread and a sharp knife. That's all.

Second, I have done all the figuring and

(Continued on page 144)



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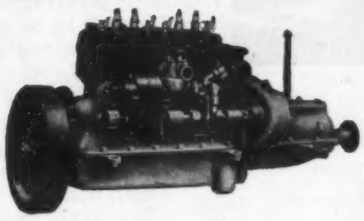

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drawing for you and all you have to do is to paste the diagrams on the card board, cut them out, stick them together carefully and you have your pelorus ready to take your azimuths so that you can win a few bets about the other fellow's compass.

Also, and incidentally, if your watch stops while you are on a cruise, you can set it within less than a minute of correct time by this little instrument.

Its accuracy is really surprising. On a trip this past winter from Tampico, Mexico, to New Orleans, I took several azimuths of the sun one morning, plotted the resultant course on the chart and began to doubt my home-made pelorus, because it seemed to show that we were steering too far to the east. But the noon sights proved the little pasteboard toy absolutely correct. We were too far east by some distance.

So, once you make it carefully and learn to use it, you can place absolute dependence on it, no matter what your compass says.

Having laid the groundwork for the use of the pelorus, let us get at the diagrams and put them together. Then, in the following article, I will tell you how to go about putting it into actual practice and try to show you how simple the complicated-looking azimuth tables really are.

So, to build the pelorus:—

The diagrams accompanying this article should be pasted flat and smooth on heavy cardboard. If you want something better and are handy with a jig saw, you can use thin hard wood but be sure to choose something that will not warp out of shape with the weather.

And here's a tip for you to remember whenever you want to paste anything up. It is especially valuable in mounting pictures.

Take the case of these diagrams. When you have pasted them to the cardboard, tear out another page of this magazine and paste it to the other side of the cardboard. Then the tendency of the paste to warp the cardboard will be equal on both sides and the cardboard will remain flat. But don't paste a light piece of paper on one side and a heavy one on the other. The two pieces of paper must be alike.

The compass card in our pelorus is separate from the movable arm which carries the sight vane and the shadow-thread. Paste the compass card down, with another page for backing, and set it aside. Then tackle the rest of the instrument.

Tear out the whole page of diagrams and paste them flat to your card, with another page on the back.

And don't attempt to cut out the diagrams until the whole thing is absolutely dry.

Paste them up to-night and do your cutting and assembling to-morrow night.

Tackle the big diagram—A—first, the long one with the bulge at the end that looks like an electric hand torch. Get a razor edge on the tip of your knife blade and cut this diagram out along the outside lines. This is the movable arm that is to carry the rest of the apparatus. You will notice a line running down the middle of it. That is your line of sight when you are taking bearings of shore objects and it is the line upon which the shadow of the thread must fall accurately to give you the correct bearing or azimuth, of the sun.

MY SHIP

By RALPH STOCK

Illustrated by P. Thurburn

THEY do not like this ship of mine
They say she is too slow,
That yachts should have a neater line
And fripperies below.

They do not like the bull-dog build
They say there's too much beam;
With polished brass they'd have her filled,
They want her painted cream.

My ship can hear, and laughs with me,
Our secret's still our own,
It fills us with unholy glee
To hear the wiseheads moan.

We met, this ship of mine and I,
Love at first sight it was,
We saw each other eye to eye,
The rest was fate, because,

I knew at once that she was mine
For better or for worse,
And she knew me by secret sign,
And took me in to nurse.

They think we'll potter round the coast,
A-yachting, if you please,
In flannels white, to Cowes at most,
And run if there's a breeze.

They little guess my ship was made
For battling with a sea
That she can go full unafraid
Where they could never be.

Meanwhile, we're fishing in the bay,
We're waiting for the war,
We learn each other day by day,
Respect each other more.

Sometime will surely come the day
God speed that it be soon,
When ship and I will sail away
On our honeymoon.

A-down the highway of the earth,
A "passage," not a trip,
Where we can prove each other's worth,
For my best girl's a ship!

(By Permission, from Pearson's Magazine.)

On this line, in its center, is a dot. Put a pin hole carefully through this dot.

In the bulging end of the drawing is a small piece marked *cut out*. Do just what it says and then heave the piece overboard. The dotted line running across it is merely to show you where you are to run a thread. There are two dots inboard of this *cut out* section. Put a good knot in the end of a black thread, and pass the needle down through the inside dot and up through the other one, carry it straight across the open space, pass it down through the dot on the other side and up through the dot away out near the end, cut slits in the places where you see the two short oblique lines and use them as a cleat, giving the thread several round turns in them so that it will hold taut across the open space.

Afterward, when you mount this arm on the compass card, the point and degree marks will be seen through this open space and the thread will cut them down to a fairly good estimate of a quarter of a degree. It won't be so accurate as the vernier on a surveyor's transit but it will serve every purpose for which you will want to use it.

The several little squares in dotted lines scattered over the head of the torch and marked *braces* are bits of heavy paper, folded like a hinge or an angle iron and glued with one side to this arm and the other to the pieces that are to be mounted upright on the arm. The places where these other pieces—diagrams B, C, and D—are to go are also shown by dotted lines. I will explain the note about the level later.

To the right of the torch head is diagram B. This is to be mounted edgewise and upright on the head of the torch along the transverse dotted lines. It is to be fastened by the *braces* but first you must cut out the long rectangle in the middle of B and pass a black thread lengthwise along its center as you did across the little cut-out in A. Pass the needle accurately through the dots, for the thread must be in the true center and perfectly *up and down*.

Diagram C, when cut apart, gives you two right-angle braces that will hold B perfectly perpendicular upon A.

When you mount B upon A, the most important consideration is to see that the two little arrow heads come exactly together so that the shadow thread will be plumb over the central line down the length of A.

Diagram D is to be cut out and a thread passed through as in the other two pieces. Again see that the arrow points come exactly together. You will not need D in taking azimuths of the sun but you will require it later when you begin to use the stars and it is essential in taking bearings of objects on land.

The whole arm, put together, is shown in another sketch. With this arm revolving freely on the compass card by a pin through the centre of each, you have a pelorus that is ready to give you a lot of amusement and keep an unfailing check upon the vagaries of your compass no matter where you cruise or how much other magnetic attraction there may be around you.

But first you must put a little spirit or

(Continued on page 157)

THINK THIS THROUGH

Facts that are dead right lead to conclusions you cannot escape

MAGAZINES are made up of: Paper, Ink, Presswork, Binding, Glue, Wire or Thread, Wrappers or Labels, and Postage, all produced, assembled and distributed by employed Brains and Muscles. During the last twelve months, the cost of each of these factors has increased in some cases more than double. In the twelve months to come many, if not all of these factors will be increased still more.

THESE ARE FACTS

For these reasons many magazines have been forced to increase their price this past year. And it is just as evident as can possibly be that other magazines will be forced to increase their prices.

YOU CANNOT ESCAPE THIS CONCLUSION

The prices given here are not guaranteed to hold for more than 30 days. It is your last chance. Because for 30 days only we will fill subscriptions at the prices given below. Next month we shall revise them. Be forehanded. Don't put this off. Select your next year's magazines now and send us your order.

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33	Ainslee's	100	Judge	25	Photo Era
30	ALL OUTDOORS	100	Leslie's Weekly	23	Physical Culture
23	American Boy	100	Life	40	Pictorial Review
25	American Magazine	60	Literary Digest	40	Popular Science
30	Atlantic Monthly	20	Little Folks	40	Review of Reviews
25	Baseball Magazine	17	McCall's	25	Rod and Gun
17	Boys' Life	20	McClure's	70	Scientific American
17	Boys' Magazine	30	Metropolitan	50	St. Nicholas
70	Century	17	Modern Priscilla	50	Scribner's
30	Christian Herald	40	Motor Boat	23	Short Stories
50	Collier's Weekly	23	Musician	45	Smart Set
70	Country Life	30	Musical Observer	23	Sunset
55	Current Opinion	70	Nation	65	Theatre
30	Delineator	25	National Sportsman	55	Travel
12	Designer	80	New Republic	30	Woman's Home Companion (After Oct. 1 class 40)
25	Everybody's	80	North American Review		
27	Etude			15	Woman's Magazine
25	Field and Stream	23	Outer's Book	50	World's Work
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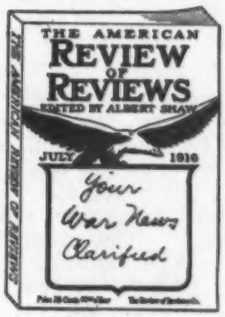

The Revival of Wooden Shipbuilding

Wooden Ships for a Few Years Will Again be Built, Launched and Sent to Trade upon the Seven Seas, but Steel Vessels are Superior in so Many Ways that there is no Chance of Wood ever Superseding Steel as Shipbuilding Material

HAD any one predicted prior to the outbreak of war, says *Syren and Shipping*, that the wooden ship would come into her own again, he would have been scouted as a false prophet, a visionary who would unseat utilitarianism and put in its place sentiment. The advantages of iron and steel as a shipbuilding material are now so obvious and have been so long and practically demonstrated, that the mere suggestion of reversion to wood could only be regarded as evidence on the part of any who made it of puerility or insanity. Yet the strange thing has happened, as it has so frequently in the complex history of this world of ours, and the wooden ship, with all the shortcomings inherent to construction of such a material, bids fair to once again play an important part in sea transportation. Viewed from our present-day standpoint, it is no miracle that has been wrought. It is no temporary declension from the paths of sanity that has induced the shipbuilder to revert to primordial example, and, like the first man who journeyed by water, use wood for the construction of his vehicle. We want ships and want them badly. The whole world requires them, and we want them in being at the earliest possible moment. Naturally we turn to steel, the material which from the late 'seventies onwards has been recognized as the most suitable for ship construction. And here we were faced by considerable difficulty. The demand for steel for munitions and other purposes of war had increased enormously. The whole civilized world was engaged in converting its plough-shares into swords, and of steel for ships there was not sufficient. Further, much of our supplies of ore had to be imported oversea, and the piratical U-boats naturally devoted much time and energy in the sinking of such cargoes. There was thus in spite of frenzied efforts to increase our output of steel, a serious shortage, and then it was that common sense suggested that recourse should be had to the material which our forefathers used.

Until about 1840 practically all vessels were of wood. By that time great perfection had been attained in the use of this material, but its possibilities in the matter of size were limited, for, although in some exceptional cases a length of 300 feet was attained, few wood ships exceeded 200 feet. Even when of this moderate size, to make wood sea-going ships quite strong enough was impracticable, for, as the numerous short pieces of which they are composed can be but imperfectly connected, the inevitable slipping or straining movement of each one upon its neighbor results, in time, in a large and permanent deformation of the hull, so much so that in old vessels the keel line often departs some feet from the straight, bending upwards in the middle, or "hogging," as it is termed. Although many of those accustomed to wood scouted the idea of iron sea-going vessels, they had soon to admit their superiority. It was forcibly demonstrated by the accidental stoppage of some of the early vessels during the launch, which involved their taking, at low tide, a bridge-like position, supported at either end, or with a large portion overhanging; and, although subjected to such abnormal stress, the hull showed little or no sign of bending. No wood ship could have withstood such treatment; when lying afloat immediately after launching, they were often found to have bent some inches from the straight. The precise date at which iron was first used for shipbuilding is unknown, for, to begin with, it was employed in a tentative fashion for canal barges and the like. As to durability, in wooden ships the chief source of deterioration is dry rot, in iron or steel ships the wasting of the surfaces, especially of such portions of the outer surfaces of the bottom plating as are frequently left bare of paint and exposed to the sea, and of the inner surfaces of the bottom in machinery spaces, etc. If dry-rot can be prevented the life of the wood ship will be lengthened; so also will the life of the iron or steel ship if the surfaces can be kept covered with paint, to prevent the action of air and water. With both wood and iron or steel ships, if the parts which have become deteriorated can be removed and replaced, this is usually worth doing when the deterioration is only local. At the end of the eighteenth century the preservation of wood was not so well understood as it is at the present day, and teak, one of the most durable of woods, was, in Great Britain at least, little known. The ships of the Royal Navy as then constructed were only expected to be available for service some fifteen or twenty years. The ships built for the East India Company made on an average, four voyages, which occupied eight years. This at one time was considered the vessel's life, so far as the company's service was considered, but subsequently, if on examination at the expiration of that time they appeared worth repairing, this was done, and they were allowed to make two more voyages. It was very unusual for one of these ships to make more than six voyages; after which they were sold for other services or broken up.

The resuscitation of wooden shipbuilding puts back the clock of progress some five or six decades. Vessels which were admittedly of a more or less experimental character had been built of iron as far back as close upon a century ago. Among these pioneers of the "iron age" were the Aaron Manby, built at Horsley in 1821. Six years later the iron steamer Algaia was built on the Clyde for service on Lock Eck. In 1831 the iron steamer Fairy Queen was plying on the Clyde. Two years prior to this date Messrs. Laird had built on the Mersey a more pretentious vessel also of iron, while in 1838 Messrs. Todd and Macgregor built the Royal Sovereign and the Royal George for the passenger service between Glasgow and Liverpool. These and other boats were not, however, regarded as sounding the knell of the wooden vessel. There were bitter and ignorant prejudices against the use of a shipbuilding material which was *per se* heavier than the volume of water it displaced. This antipathy was largely due to the conservative views of the British Government, who, we are informed, declined until the 'fifties, when iron vessels were in fairly general use, to allow the mails to be carried in other than wooden ships. The craft which did most to demonstrate that wood was not par excellence the shipbuilding material was the Great Britain, a screw steamer with a length of 322 feet and a displacement at load draught of 3,618 tons. We need not allude to other features of Brunel's famous vessel, which, although she made her advent in 1845, solved many important problems in naval

(Continued on page 158)

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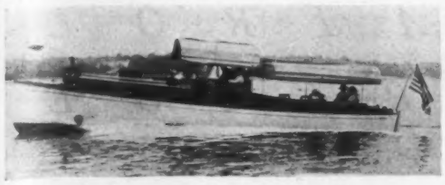
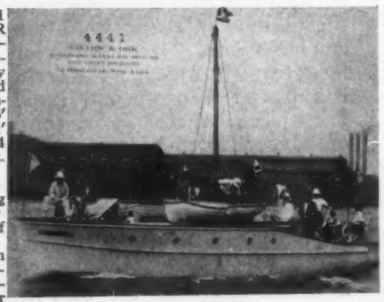
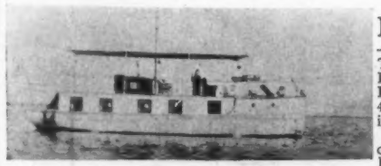


NO. 5051—FOR SALE—Attractive modern express day cruiser, 40 feet length, built 1917, Van Blerck motor, speed 22 miles, heavy construction: all first class condition. Price reasonable. Gielow & Orr, 52 Broadway, New York City.

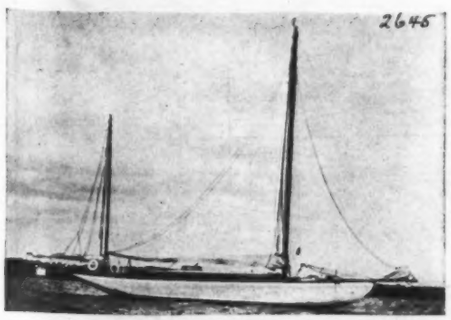
NO. 3987—SALE—CHARTER—Up-to-date modern 85 Florida cruising houseboat. Four large staterooms, Standard motor. Speed 10 miles, draft 30". Hot and cold water, electric lights. Inspectable Florida. Price reasonable. Gielow & Orr, 52 Broadway, New York City.



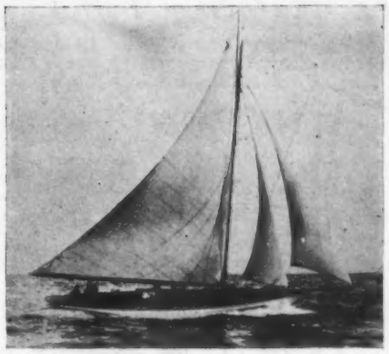
NO. 4441—FOR SALE—Exceptionally able raised deck cruiser. 45' length, 11' beam, 3'4 draft. Four cylinder Sterling motor with self starter. Speed ten miles. Accommodates four persons besides crew. Has made extended cruises off shore. Proven wonderful sea boat. Fully equipped. In commission, New York. Owner anxious to sell. Price low. Gielow & Orr, 52 Broadway, New York City.



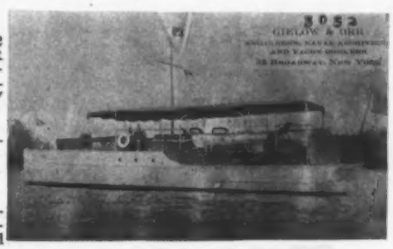
NO. 6233—CHARTER for FLORIDA—New 43' Mathis house boat cruiser. Beam 13' 6", draft 32". Speed 8 miles. Four cylinder Standard motor. Stateroom and saloon sleep six. Completely equipped. Delivered in commission October 1st. Price reasonable with captain paid. Gielow & Orr, 52 Broadway, New York City.



NO. 2645—FOR SALE AND CHARTER—Most attractive 55 foot auxiliary yawl. Beam 15 feet, draft 2' 8. Four cylinder motor. Speed seven miles. Large saloon and stateroom. Sleeps six persons. Boat in commission near New York. Opportunity to obtain a bargain. Gielow & Orr, 52 Broadway, New York City.



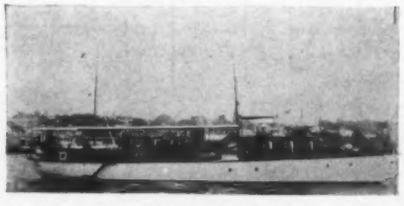
NO. 2013—FOR SALE—Herreshoff 30' Water line Buzzards Bay class sloop. 46' 6" overall, draft 5'4, sails new 1917. Completely furnished and fitted for cruising. In commission near New York. In first class condition throughout. Price low, if sold before laying up. Gielow & Orr, 52 Broadway, New York City.



NO. 5052—FOR SALE—Desirable 55' cruiser. Large deck accommodations. Two double, one single stateroom and main saloon. Sleep six. Four cylinder heavy duty motor. Speed ten miles. Exceptionally roomy boat for size. Perfect condition throughout. In commission near New York. Price reasonable. Gielow & Orr, 52 Broadway, New York City.

NO. 43—FOR SALE—Well kept up 95-foot auxiliary keel schooner. 68 feet waterline, 20 feet 5 inches beam, 10 feet draft. Handsomely finished inside. Three staterooms, bathroom. Sails, engine and cabin equipment new 1916. Gielow & Orr, 52 Broadway, New York City.

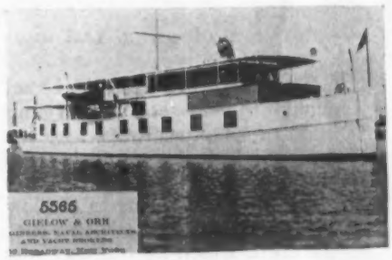
NO. 4591—FOR SALE—Able twin screw steel gasoline cruiser, 126' length, 18' beam, 6' draft. Built our design. Two 6-cylinder Speedway motors. Two double, three single staterooms. Sleeping ten. Finest available yacht of size. Fully furnished. Inspectable Great Lakes. Gielow & Orr, 52 Broadway, New York City.



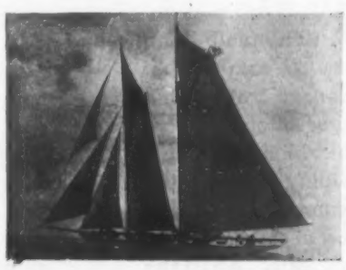
NO. 3957—FOR SALE AND CHARTER Desirable 75' cruising motor yacht. 13' beam, 3' 6" draft. Standard motor. One double, two single staterooms. Deck saloon. Perfect condition throughout. Fully equipped. Price reasonable. Gielow & Orr, 52 Broadway, New York City.

NO. 4527—FOR SALE—Desirable 40 foot cruiser, 10 foot beam, Sterling engine, stateroom and main saloon all perfect condition, fully equipped for cruising. Price reasonable. Gielow & Orr, 52 Broadway, New York City.

NO. 5378—FOR SALE—Successful class "P" sloop. Comfortable sleeping accommodations, four persons. Two suits Ratsey sails, one brand new. Outfit perfect condition. Price reasonable before laying up. Inspectable New York. Gielow & Orr, 52 Broadway, New York City.



NO. 5565—SALE—CHARTER—Modern 85' motor house boat. Draft 30", built 1916 for Florida cruising. Standard motor. Speed 9 miles. Two double two single staterooms, all modern plumbing and fittings. Most desirable boat for Florida available. Can be chartered and for sale at bargain price. Inspectable Florida. Gielow & Orr, 52 Broadway, New York City.



NO. 1640—FOR SALE—EXCEPTIONAL BARGAIN—85 foot modern keel and centreboard Lawley built schooner, flush deck, lead keel, three staterooms beside main saloon, all excellent condition and fully equipped. Boat has been kept up strictly as a yacht in first class manner. Owner will sacrifice. Gielow & Orr, 52 Broadway, New York City.

NO. 5455—FOR SALE AND CHARTER—Attractive shoal draft Florida cruiser. 45' length, 14' beam, 34" draft. Six cylinder heavy duty motor. New 1916. Speed ten miles. Large double stateroom and saloon. Sleep four besides crew. Awning full length. Exceptional deck room and ventilation. In commission. Perfect condition throughout. Price low. Gielow & Orr 52 Broadway, New York City.

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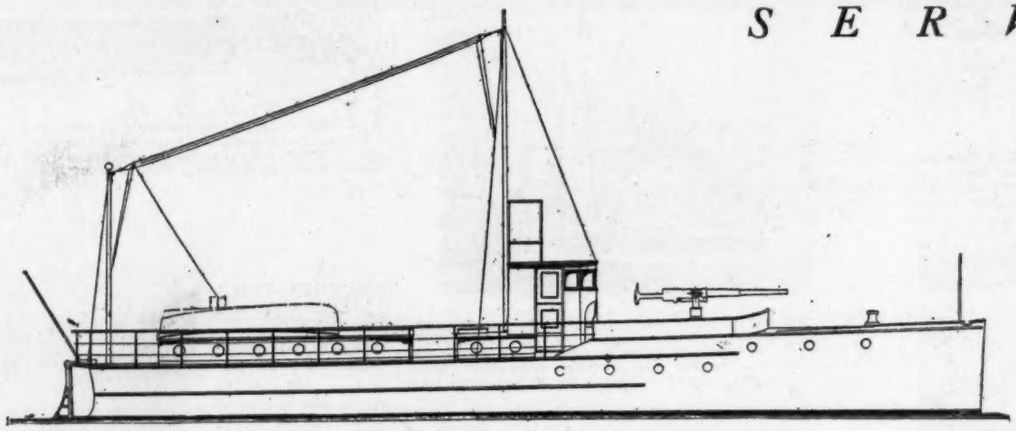

A ship-shape little vessel of the round bilge type

A 61 foot Alden designed and Van Blerck motored cruiser that has a speed of 25 miles an hour

ALL craft built for use in the naval patrol are of great interest now and the drawings of the 61 footer herewith, designed by John G. Alden of Boston, is of special interest because it is a sail-boat-man's conception of all a real boat should be.

The beam, 12 feet, is broad enough to lend good stability, an important factor always, and the draft of 3 feet is sufficient to create an able craft, yet not too deep for manouvering in shallow water. In view of the fact that the craft, which by the way was built for a prominent Boston Naval Reservest, has a speed of 25 miles an hour, her under-body lines must be wonderfully efficient.

The power plant is twin 8-cylinder Van Blerck Motors; these are placed in an engine room amid-ships. Fuel sufficient for a full speed radius of 1000 miles is carried in two tanks in the after end of the engine room.

One of the faults found with some of our converted yachts is the position of the forward gun emplacements. They are too far forward. Mr. Alden, in this craft, has placed a one-pound rapid firing piece in a cockpit one-third of the vessel's length from the bow. Here the crew have every opportunity to handle it, even during rough weather.

The cabins are arranged solely with a view to naval service and after the allies win the war, inexpensive alterations below decks will create a first class high speed yacht.

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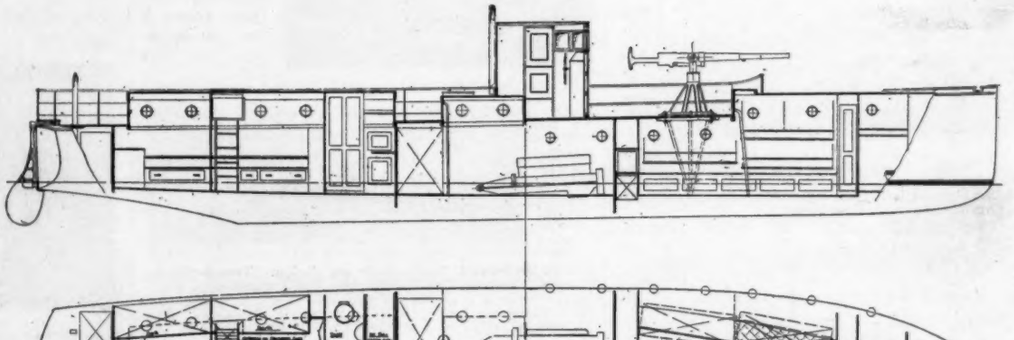

THE cabin elevation and plan show a comfortably arranged craft with a large motor room amidships, and ample sleeping and living accommodations for a crew of six men in the forecastle. Abaft the engine room there is a galley, mess room, toilet room, wireless room, and storage room

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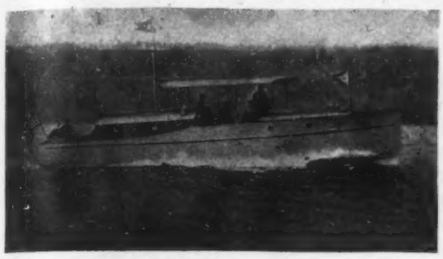
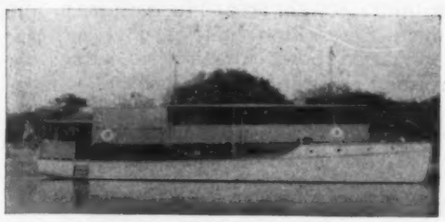
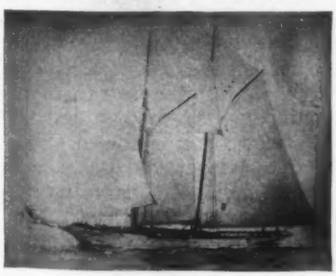


NO. 3477—FOR SALE—Fast, bridge deck cruiser; 43 x 9 x 3 ft. Built 1917 by well known firm. Speed 17 miles; 6 cyl. Speedway motor, electric lights, etc. Double stateroom forward; saloon aft with two transoms. Two toilet rooms. Price reasonable. Cox & Stevens, 15 William St., New York.

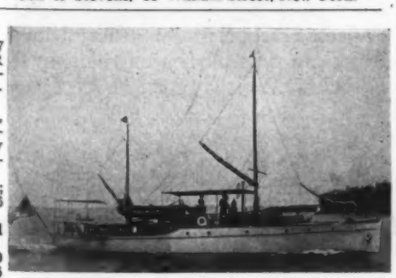


NO. 3570—FOR SALE OR CHARTER—Roomy power cruiser; 66x15.4x3 ft. 10 in. Built 1914. Speed 10-11 miles; 60 H. P. 6 cyl. motor, electric lights, etc. Large accommodation including two double staterooms, saloon 14x8 ft., bath, two toilets, etc. Unusual deck space. Practically in commission. Cox & Stevens, 15 William Street, New York.

NO. 3035—FOR SALE—Fast and very roomy bridge deck cruiser; 47x10x3 ft. Speed 16 miles; 100 H. P. 6 cyl. 4 cycle motor. Separate galley, saloon and single stateroom forward, besides double stateroom and toilet room aft. Electric lights. First class condition. Cox & Stevens, 15 William Street, New York.



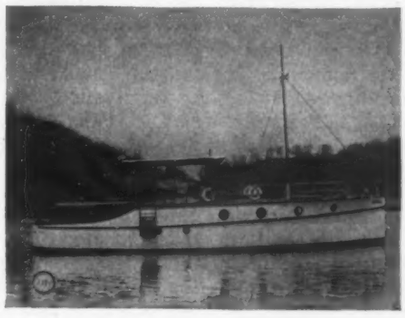
NO. 148—FOR SALE—Steel, flush deck, steam auxiliary schooner yacht; 130 ft. overall. 110 ft. Waterline, 26 ft. beam, 15.6 ft. draft. Speed under power 9knots; compound engine; electric lights; all conveniences. Extremely able craft; heavily constructed. Cox & Stevens, 15 William Street, New York.



NO. 2547—FOR SALE—Handsome, modern, exceptionally able gasoline cruiser; 64 x 12.6 x 4 ft. Speed 11½ miles; 60 H. P. 6 cylinder heavy duty motor controlled from bridge. Main saloon, toilet and separate galley forward; engine room amidships; double and single stateroom and bathroom aft. Cox & Stevens, 15 William Street, New York.

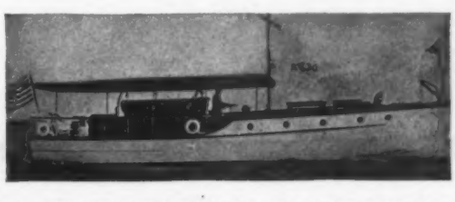
NO. 3235—FOR CHARTER—Up-to-date twin screw gasoline houseboat; 80 x 16.7 x 2.10 ft. Recent build. Speed 10 miles. Deck saloon, main cabin, three double staterooms, etc. Cox & Stevens, 15 William Street, New York.

NO. 2560—FOR SALE—Fast, V-bottom, twin screw power cruiser; 60 x 13 x 3 ft. Built 1917. Speed up to 18 miles; two 6 cyl. Sterling motors. Double stateroom forward; roomy saloon aft with separate galley; two toilet rooms (one with Sitz bath). Low price for quick sale. Cox & Stevens, 15 William Street, New York.

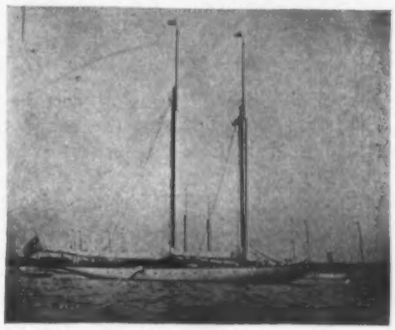


NO. 1378—FOR SALE—Bridge deck cruiser; 40 x 9 x 3.6 ft. Speed 11 miles. Double stateroom aft. Saloon and galley forward. Equipped with 6 cyl. 40 H. P. motor located under bridge deck, absolutely shut off from forward and after cabins. Price exceptionally low. Cox & Stevens, 15 William Street, New York.

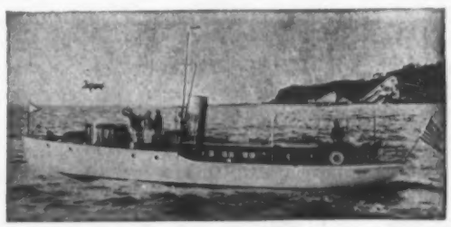
NO. 3529—FOR SALE—Fast, up-to-date 60 ft. bridge deck cruiser. Speed 18 miles; 8-cylinder Van Blerck motor (new 1917). Double stateroom, saloon, large galley, etc. Cox & Stevens, 15 William Street, New York.



NO. 2830—FOR SALE—Modern 50 ft. bridge deck cruiser. Speed 11 to 12 miles; 40-50 H. P. 20th Century motor; electric lights, etc. Saloon and separate galley forward; double stateroom and toilet aft. In commission. Low price. Cox & Stevens, 15 William Street, New York.

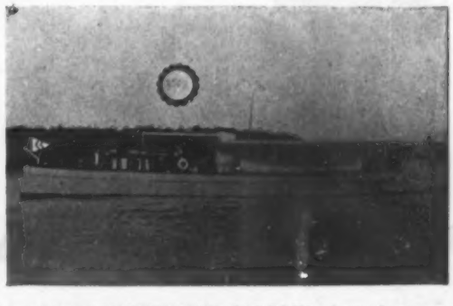


NO. S-28—EXCEPTIONAL BARGAIN—Well known 90 ft. waterline flush deck schooner yacht. Ratsey sails. Six staterooms; three bathrooms. Unusually complete inventory. Exceptional opportunity. Cox & Stevens, 15 William Street, New York.



NO. 1070—FOR SALE—Modern gasoline cruiser; 60 x 11.6 x 3.9 ft. Speed 11 miles. Dining saloon forward; main saloon (convertible into stateroom) and double stateroom aft. Very able, desirable craft. Best construction. Low price. Cox & Stevens, 15 William Street, New York.

NO. 3541 — FOR SALE OR CHARTER — Particularly desirable 100 ft. steel twin screw cruising power yacht. Practically in commission; very attractively finished and furnished. Speed up to 15 miles; two 6 cyl. air-starting and reversible Standard motors. Fitted with every convenience. Large dining saloon and social hall on deck; five staterooms, bath, two toilet rooms, etc. Without doubt finest craft of type and size available. Cox & Stevens, 15 William Street, New York.



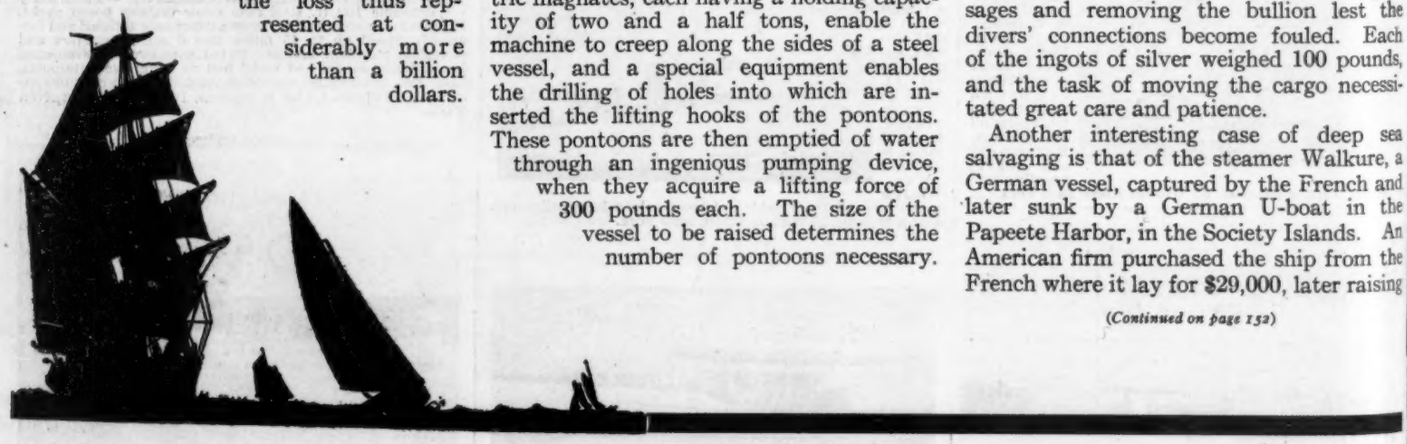
NO. 2508—EXCEPTIONAL BARGAIN—Smart, fast power yacht; 65x10.5x3.6 ft. Speed up to 16 miles; 125/150 H. P. 6 cyl. air-starting and reversible Standard motor. Dining saloon and galley forward; stateroom with toilet room aft. Very substantially built. Cox & Stevens, 15 William Street, New York.

Salvaging Ships from Deep Water

Some Interesting Recent Developments in the Art of Raising Sunken Vessels. Vast Riches are Strewn about Old Ocean's Floor but at Depths too Great for even the most Skilled Divers to Work. Here is a Machine that may Reclaim Some of them

THE probability of raising certain of the ships sunk during the war is a subject of much general interest and speculation. Many of these ships carried gold bullion and imperishable cargoes of great value; but the fact that the greater part of them lie in depths that preclude the employment of divers, has rendered the usual method of salvaging impossible. At depths greater than three hundred feet, the pressure of the water is too great to permit of a diver remaining submerged for more than a few minutes, and consequently any work he might do at that depth would be inconsiderable. The experience of the Navy Department several years ago, during the raising of the F-4, which was lost at Honolulu Harbor, showed that it was impracticable for divers to work successfully at more than 215 feet. As a rule, however, unless conditions are favorable, commercial wreckers, depending upon divers for the success of their enterprises, hesitate to undertake the salvage of vessels lying at a greater depth than 160 feet.

Even before the war, the yearly losses in ships sunk through accident was enormous. The shipping records of the Bureau Veritas, at Liverpool and London, show that from 1905 to 1911, 2,778 steamships and 4,571 sailing vessels were lost, and of this number, eighty-one have been successfully salvaged. It is estimated that in normal times disasters at sea result in an annual loss of $25,000,000. No precise estimate has been made of the value of ships and their cargoes lost through the hazards of war since 1914. It is stated, however, that a conservative estimate places the loss thus represented at considerably more than a billion dollars.



Conspicuous among the victims of the German U-boats is the Lusitania, which, with her cargo, was valued at $10,000,000. The Japanese steamer, Yasaka Maru, which was sunk in the Mediterranean, carried $12,000,000 in gold and other valuable cargo. A loss of $2,000,000 is represented in the destruction of the Italian steamer Ancona. The Geelong, which like the Yasaka, was lost in the Mediterranean, carried jewels of the Maharajah of Kapurthala, valued at more than $4,000,000.

French interest has recently been aroused in this subject by the development of several deep-sea salvaging machines, designed to eliminate the use of divers and permit working up to depths of almost one thousand feet. Such a machine has lately been perfected by the American Salvage Company, a New York concern. This device, designed to operate in connection with pontoons, is in reality a spherical submarine. It is equipped with an air supply somewhat similar to that used in submersibles. A normal atmospheric pressure inside the machine is maintained through a contrivance which permits the air to enter at a pre-determined rate per minute, while the exhausted air is continually discharged by pumps.

The machine is capable of being operated in any direction through the medium of a rudder and propellers located in the rear and bottom of the machine. Light sufficient to enable the huge sphere to operate successfully is supplied by six 3,000 candle power nitrogen lamps covered with steel netting and situated at the bottom of the machine. Near each light is a small window through which the two operators in the machine are enabled to locate the wreck. Once located, four electric magnates, each having a holding capacity of two and a half tons, enable the machine to creep along the sides of a steel vessel, and a special equipment enables the drilling of holes into which are inserted the lifting hooks of the pontoons. These pontoons are then emptied of water through an ingenious pumping device, when they acquire a lifting force of 300 pounds each. The size of the vessel to be raised determines the number of pontoons necessary.

In the past, many interesting devices have been used in the effort to recover sunken treasure. Some years ago, an inventor named Guiseppo Pino, in an effort to locate the sunken Spanish Galleons, which for many years have lured the adventurous, constructed a device consisting of a telescopic steel tube, equipped with a complicated series of lenses, and mirrors designed to enable the operators to see the reflection of any object undersea within a certain area. In connection with this device, Pino built a novel creeping submarine boat, intended to attach the roisting apparatus to the wreck.

This adventure, despite elaborate precautions taken, proved unsuccessful. Another ingenious device used with some success in an effort several years ago to recover the gold bullion lost in 1791 in the Zuyder Zee on the French ship Lutine consisted of huge suction pumps intended to draw the débris of the wreck.

One of the most spectacular successes in deep-sea salvaging was the recovery by the Canadian Salvage Association of half the $1,000,000 cargo of silver bars lost on the Empress of Ireland, which sank in the St. Lawrence River in 1914. The ill-fated vessel lay at a depth of 150 feet, and because of the swift current great difficulty was experienced in locating and carrying out the preliminary work. The difficulties of the divers were increased by the fact that the vessel lay at an angle of sixty degrees, and the location on the outside of the ship of the relative situation of the species room was a laborious and dangerous undertaking. When an entrance was finally effected, extreme caution was necessary in exploring the intricate passages and removing the bullion lest the divers' connections become fouled. Each of the ingots of silver weighed 100 pounds, and the task of moving the cargo necessitated great care and patience.

Another interesting case of deep sea salvaging is that of the steamer Walkure, a German vessel, captured by the French and later sunk by a German U-boat in the Papeete Harbor, in the Society Islands. An American firm purchased the ship from the French where it lay for $29,000, later raising

(Continued on page 152)

NAVAL ARCHITECTS
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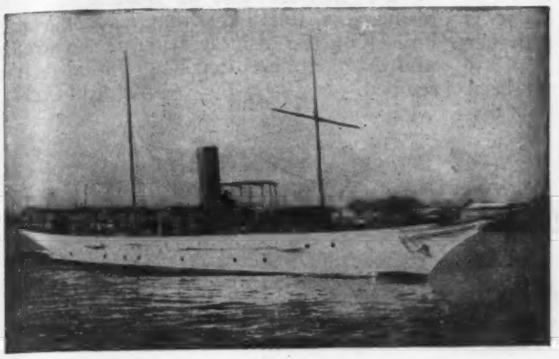
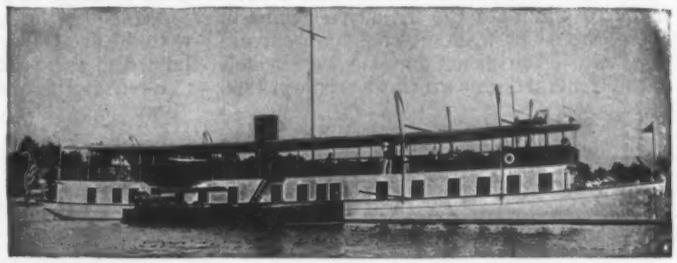
MARINE INSURANCE
REPRESENTED
ABROAD

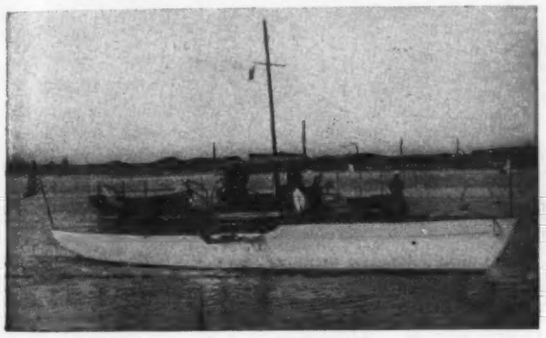
OFFER FOR SALE THE FOLLOWING YACHTS, A NUMBER OF WHICH ARE AVAILABLE FOR CHARTER



NO. 7987—FOR SALE OR CHARTER—Modern cruising motor yacht 106 x 13.6 x 6 ft. draught. Built 1911. 300 H. P. Standard motor; speed 13 knots; 4 staterooms, saloon below, deck dining saloon, bath room, 2 owner's water closets. Lighted by electricity. Large quarter and bridge decks. Full data from Tams, Lemoine &Crane,52 Pine St., New York.



NO. 1848—SALE—CHARTER.—Modern houseboat, ideally suited for southern waters, 123 x 115 x 17.8 x 3.4 ft.; 2 Standard motors, 4 large staterooms, 2 bathrooms, saloon; very large shade deck; lighted by electricity and has new ice machine. Full particulars from Tams, Lemoine & Crane, 52 Pine St., New York.



NO. 8940—FOR SALE.—Exceptional opportunity to purchase at a bargain, raised deck cruiser, 61 x 12.10 x 3.6 ft. draught, built 1909, 2-40 H. P. Knox motors new 1912, lighted by electricity. Excellent owner's accommodations. Further particulars from Tams, Lemoine & Crane, 52 Pine St., New York.

NO. 6054.—Auxiliary caravel yacht, the most picturesque houseboat in America; extraordinary accommodations on deck and below. Should be seen to be appreciated; a comfortable, safe cruiser. Has covered the coast between New York and Bar Harbor several times. If stripped of her caravel rig and high bulwarks and rails, the hull would still make a most desirable houseboat. Further particulars from Tams, Lemoine & Crane, 52 Pine Street, New York.

WILLIAM GARDNER & CO.

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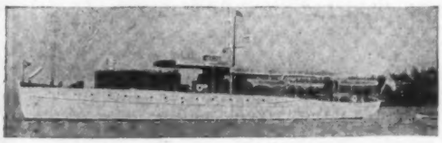
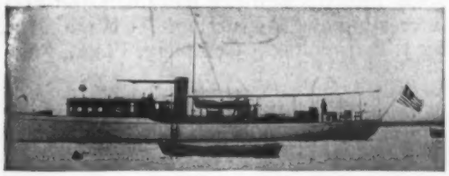
WE HAVE A COMPLETE LIST OF YACHTS OF EVERY DESCRIPTION FOR SALE AND CHARTER. PLANS, PHOTOS AND FULL PARTICULARS FURNISHED ON REQUEST

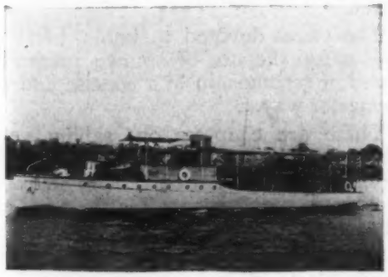


NO. 1937—Diesel Power Yacht, 110 ft. by 18, two 6 cylinder 150-180 H. P. engines; low fuel cost. Apply William Gardner & Co., 1 Broadway, New York.

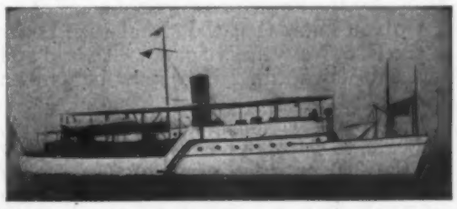


NO. 1081—90 ft. Power Yacht, 2 new six cylinder Standard engines installed 1916, and yacht overhauled throughout. Excellent accommodation. Apply William Gardner & Co., 1 Broadway New York.

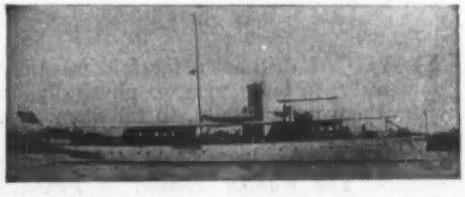
NO. 2243—Practically new, twin-screw 60 foot express cruiser, Sterling engines, speed 22 miles. Apply William Gardner & Co., 1 Broadway, New York.



NO. 1738—Raised Deck Cruiser, 65' x 11', six cylinder motor; good accommodation. Apply William Gardner & Company, 1 Broadway, New York.



NO. 924—Power Yacht, 92 ft., six-cylinder 20th Century motor recently overhauled, good deck space. Apply William Gardner & Co., 1 Broadway, New York.



NO. 646—SALE—CHARTER—Steel Steam Yacht, 123 x 17, two large deckhouses, five staterooms, etc. Condition good as new. Apply William Gardner & Co., 1 Broadway, New York.

Consult YACHTING'S Information Department on any of your problems. Its service is absolutely free

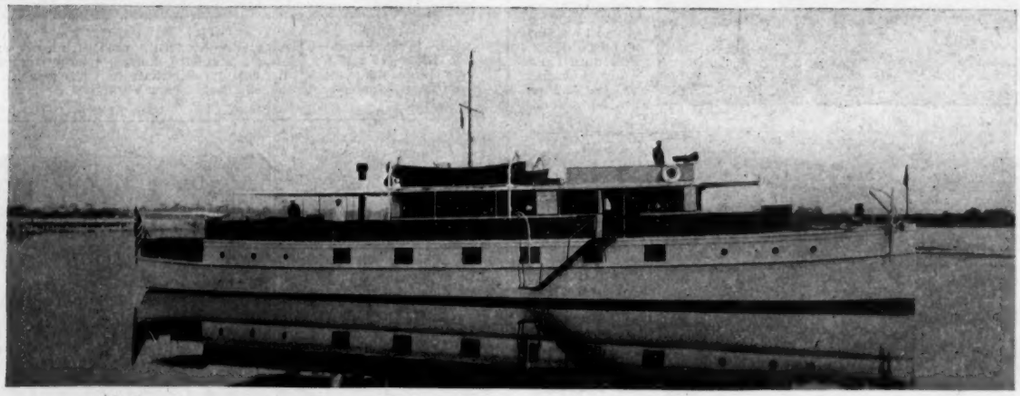
(Continued from page 130)

it by means of a coffer dam. Eventually the salvaged vessel was sold to an Eastern shipping concern, the consideration being $1,000,000.

Even the rich cargoes of ships lost prior to the war have proven a sufficient inducement to stimulate the inventive genius of those interested in the possibility of salvaging them. Conspicuous among these vessels is the General Grant which was sunk in 1866 off the Auckland Island in eighty feet of water, carrying to the bottom with her $15,000,000 in gold bars and bullion. There is also the Islander with her cargo of $2,000,000 in gold which met with disaster off the Alaskan coast, the Flagship Florentia off the Scottish coast with a cargo of gold and silver valued at $15,000,000, the Merida off Cape Hatteras with $1,000,000 in gold and silver in her hold, and there are many others.

Even at this date all hope has not been abandoned that some of the $140,000,000 in treasure lost in 1812, when seventeen Spanish ships were sunk off the coast of Spain, may be recovered. In the past, a total of $20,000,000 has been salved from these ships. While a certain percentage of the treasure lost at distant dates is recoverable, it is likely that vast sums must be lost by the disintegration of the wrecks and the continued deposits of mud on the sea bed. —*Nautical Gazette.*

A CRAFT OF THE SOUTHLAND, *HIBISCUS*



CHARTERED last winter by Mr. John Wanamaker for southern cruising this Haddock designed boat proved to be an efficient and able craft.

She is powered with an Anderson engine of 100 h. p. which propels her at a cruising speed of 9 miles an hour on a gasoline consumption of less than one gallon a mile. *Hibiscus* is now owned by Mr. J. H. Walker of Magnolia, Mass.

FOR THE SKIPPER'S BOOK SHELF

CAPT. FELIX RIESENBERG, Supt. of the New York State Nautical School and well known to YACHTING readers as the author of *Under Sail* has compiled and written a hand-book for the men of the merchant marine. This book, *The Men on Deck* points out the things the various members of the deck department of an ocean going steam vessel should know and the things that they may be required to do. The book does not pretend to tell *How*, but its object is to show *What* a modern American seaman ought to know, and to do, and to lay before him the laws by which his calling is regulated. D. Van Nostrand Company, New York, N. Y. are its publishers.

PHYSICAL drill has a fourfold function: namely, to build men up physically, to wake them up mentally, to fill them with enthusiasm, and to discipline them.

There is a fine little book on the above subject, *The Koehler Method of Physical Drill*, written by Capt. William H. Wilbur of the United States Army, that all men going into the army or navy will find both interesting and instructive. It is published by J. B. Lippincott Company, Phila., Pa.

DO you know that the weight of the armor of the *U. S. S. Pennsylvania* is one quarter of her total weight?

Do you know that the famous old yacht *America* sailed across the Atlantic in 17 and one half days in 1851 when she visited English waters and won the Queen's Cup?

Do you know that the first trading ship on the Great Lakes was built at Buffalo, N. Y., by the French voyageur, La Salle?

Do you know that the signal code books of the U. S. Navy are weighted with lead and if a ship is captured they *must* be thrown over-board?

Information complete pertaining to yachts, to boats, to ships, to navies, and to shipping fill the 390 or more pages of *The Marvel Book of American Ships* published by Frederick A. Stokes Company of New York and written by Captain Orton P. Jackson, U. S. N. and Major Frank E. Evans U. S. M. C.

ALTHOUGH compiled especially for the guidance and instruction of apprentices on the training ships of the United States Shipping Board the *Merchant Marine Manual*, written by Capt. Eugene E. O'Donnell, formerly Supervising Inspector of Steam Vessels and Supervisor of Sea Training, is replete with information for men who motor-yacht.

The pages devoted to knots, bends and splices for the use of seamen present this phase of seamanship in a concise and easy-to-master way.

There are chapters on: sailing vessels, steam vessels, internal combustion engines, signals used by mariners, help in case of accidents, requirements for licensing deck officers, etc.

The book is published by the Yachtsman's Guide, Boston, Mass.

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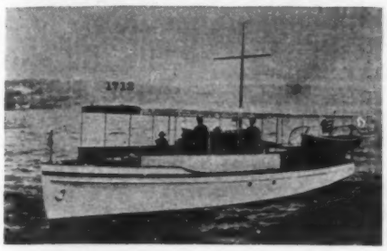
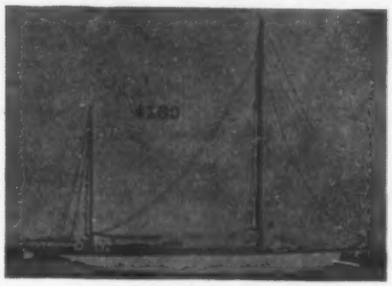
All the available yachts for sale and charter. Below are a few of our offerings. Our knowledge of the yachts we offer, and our experience of over 25 years in the business, insures satisfaction to any one buying or chartering a yacht through this office. Send for our Catalogue



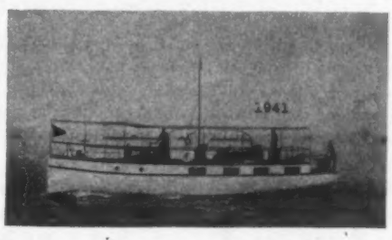
NO. 1712—SALE OR CHARTER—Bridge deck cruiser. 48′ x 14′ x 2′10″. Large stateroom and main cabin. Sleeps five. Three toilets. Speed 9 miles.

NO. 4144—Steel schooner 127′ x 87′ x 24′3″ x 14′2″. Five staterooms, large saloon, three baths, etc.

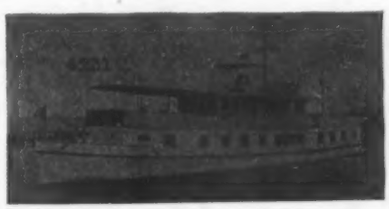


NO. 4180—SALE OR CHARTER—Auxiliary centreboar Yawl. 55′ x 38′ x 15′ x 3′. Stateroom and cabin sleep five. 15-20 H.P. Motor. Speed 7 miles.

NO. 4287—SALE OR CHARTER—Power houseboat 90′ x 18′2″ x 2′9″. Five staterooms. Living and dining rooms, bath, etc. Speed 11 miles. Price attractive. Located in Florida.



NO. 1941—SALE OR CHARTER—Semi-houseboat and cruiser 52′ x 14′7″ x 3′. Large stateroom and main cabin. Sleeps six. 32-37 H.P. Standard Motor. Speed 9-10 miles. Electric lights, etc.



NO. 4231—SALE OR CHARTER—Power houseboat 85′ x 18′ x 2′6″. Five staterooms, living and dining room, bath, etc. Speed 10-12 miles. Located in Florida.

MONEY MAKES THE SHIPS GO!

By CHARLES M. SCHWAB

DESPITE the fact that we have made real progress in shipbuilding, it must be remembered by every patriotic American that the need for ships increases proportionately with the increase in the size of our fighting forces overseas. Transporting troops to Europe is only one-fourth of the task that our shipping facilities must bear. The other three-fourths is the carrying of supplies and munitions of war.

Ships cannot be built without money. In war time it takes *a great deal of money.* Undoubtedly after the war is over the ships that we are building now will pay for themselves many times over. *But the immediate need is money and the whole-hearted support of the entire nation.*

If the American people could visualize what has been done in our shipyards with the money that they invested in the first Liberty Loans, I am sure they would be as proud and as enthusiastic as I am. The ships that we have built and are building should persuade the most cautious investor to put his money into Liberty Bonds of the fourth issue.

Buy Liberty Bonds—They Are the Best Investment in the World!

THIS SPACE CONTRIBUTED TO WINNING THE WAR BY

NEW YORK SHIP BROKERAGE COMPANY
and G. W. FORD YACHT AGENCY
30 E. 42nd St., New York

Of Interest to the Skipper

H. H. Jennings Company Report Yacht Sales

THROUGH their New York office, 1 Broadway, H. H. Jennings Company have made the following sales:

Power Yacht, *Florimor*, for the Estate of John J. Graham to a Mr. Edmund C. Gaskill, Jr.

Power Yacht, *Margo*, for Mr. Fred A. Downes, to a Mr. A. C. Sisman of Detroit, Michigan.

Elco express *Mary Edna*, for Mr. Charles E. Wood to Mr. Wilbert J. Austin of Cleveland, Ohio.

Express cruiser, *Ranger*, for Major Lorillard Spencer to Mr. C. Ray Houser.

Power yacht, *Gleam*, for Mr. Calvin I. Crocker to Mr. Earle L. Ovington, Atlantic City, N. J.

Power yacht, *Awandra*, for Mr. George E. Brower to Mr. Joseph J. Miller of Detroit, Michigan.

Express cruiser, *Sarah Jane*, for Mr. W. C. Handlan to the Bluefields Fruit & Steamship Co., of New Orleans, La.

Power yacht, *Helen M.*, for Fred A. Mabbett to Mr. Joseph Mercadante of New York City.

Auxiliary schooner yacht, *Mystery*, for Chester W. Chapin to Mr. Allan U. Johnson of Nassau, Bahamas.

Of Interest to Evinrude Owners

This time of the year we generally warn those of our customers whose address we have to give their machine a little care when they put it away for the winter. Most people, undoubtedly, know how to handle this matter, but you would be surprised to know how many of our customers there are who at the end of the season will throw their motor in the barn or any old place and then they will wonder the following year why the machine does not run as good as when they used it last. An Evinrude will last for years with proper care—it is not the use, but the abuse that wears it out. When you put the motor away, be sure that you oil it well inside, grease it outside and store it in a dry place Then you will find the motor in a good condition next Spring and save unnecessary repair charges.

If your machine has not been working well during this season, you should have it looked over this fall before you put it away. If you cannot do the overhauling yourself, have it sent to us when you are through with it, as we are fully equipped to do the overhauling here.

Make sure before you put the motor away that you take a list of whatever parts you think you may need for the next season and order the parts *NOW*.

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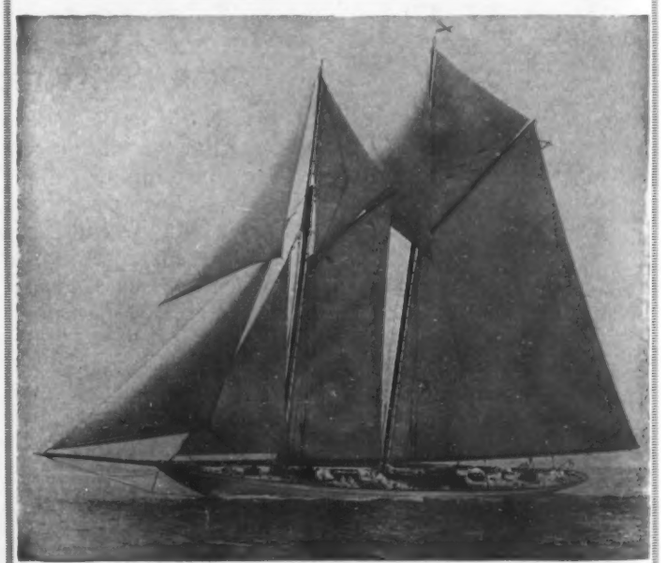

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M. L. Notions and Facts

(Continued from page 126)

More especially are we inclined to do so for the reason that the Authority at the Base here referred to is wont to trust to our judgment and honor.

So we cleared from the quayside and, followed by our consort, or B boat to be more technical, we proceeded down the river, which flows into the sea between two sandy points, although the bar is some distance outside of this again. As we approached the mouth it was pretty obvious from the motion we began to feel even here that there was a considerable disturbance outside, and it became pretty evident to me that we should not be able to work in it. I gave orders to the B. boat to remain under the shelter of one of the points, while we went a little way out to sea to have a look. There was a thick haze of fine rain, but not much wind, and the visibility was too poor to give us warning of the actual state of the sea, but I went on without much misgiving, thinking that I could easily turn round and run back if the sea should prove too much for us. Then a curious thing happened. When clear of the mouth of the river, yet fully a mile from the bar, a steep hill of water with an almost perpendicular face and a top that looked as if it might topple over at any moment, loomed ahead, magnified to a fear-inspiring size. In a moment I had stopped one engine and rung the other to dead slow, giving the vessel a little sheer in order not to meet the sea end on. Now it is seldom the first sea that matters, but the one that follows, and at the brave little vessel rose almost on end to climb the sea, it was with a sickening sense of helplessness that I saw the next sea following was as threatening. This we should have to surmount at a disadvantage, starting for our leap from an opposite angle of incline. We fell—I can use no other expression to describe our journey down the rear side of the first wave—and with a roar on each side of us the top of the first sea broke harmlessly past us from amidships and as we fell sheer down into the trough, our propeller raced. For one fearful moment I was afraid it had gone; but no, it was only the plucky engineer at his post with hand on throttle to save the situation. Then the next sea was on us. It was impossible to get over the top, so steep was the side; but, bravely struggling, she struck her nose into about four feet of solid green water at the top, and in a moment we were buried to the chart house. But only for a moment, for with a convulsive shake of her fragile body she rose, and the water was off in a second, and we were ready for the next.

I saw now it would be too dangerous a manœuver to turn round and run back; so there was nothing for it but to go on until we came to the open sea and deep water, a matter of at least a mile. Taking the wheel, I posted the crew amidships to get the weight off the ends, and with an engineer at the throttle of each engine I prepared to nurse her through. It was to me an anxious mile, as with engines and helm I did my best to dodge the worst of the seas, sometimes edging over to one side of the channel as I detected a less dangerous shoulder of a sea, anon actually stopping the engines altogether before the approach of an extra steep one, not daring to think what would happen if the engines refused to start again immediately. It was a case of choosing the lesser of two risks, besides which I had every confidence in the pluck and ability of my chief, and I knew that if it were humanly possible to keep the engines going, he would do it.

In this manner we crossed the bar, now a mass of broken water from side to side of the fairway, and as we gradually approached the open, the sea became longer and less steep, until, after what seemed an age, we were outside and in comparative safety, climbing easily over the mountainous swell. The wind now began to freshen to a moderate gale and since there was no port to run into, we had no alternative but to go back over the bar again, even though the ebb tide was still in full force. True it might have been possible to stick it out at sea for another five hours until the flood had made, but the weather had such a threatening appearance that I made up my mind to run in.

Perhaps the most awkward point of sailing an M.L. has is running before a sea, especially when steep. There is a very strong tendency to take awkward sheers, even to the point of broaching to, and this last predicament I knew would be fatal. Nor do I think I would have dared to try it but for the fact that I knew from experience of sweeping, how beautifully the vessel handled before a sea with her wire out and kite down.

And so, going well out to sea, I waited for a smooth, and then without difficulty turned her to head again for the bar, and as soon as she was round we payed out about 75 fathoms of sweep wire and launched the kite, the device for keeping the wire at a fixed depth. The kite of course acted as a strong drogue and kept us from yawning about, but whether it would have the same effect in the broken water and cliff-fronted seas I was yet to learn, and I confess, as the bar grew nearer, I grew afraid. I again took the wheel, stationing the coxswain at the telegraph. Dead slow on port engine and stop starboard was my only order until we went among it. As the first great sea came tumbling up astern with an angry curling crest I gripped the wheel with every sense alert, yet to my glad surprise nothing happened; hardly did she require a spoke either way, and as her stern rose buoyantly the crest roared by, breaking knee deep in a cascade of harmless water over the stern, to flow alongside the cabin top and fall back again over the side. A great strain came on the kite wire, but the gear was good and the kite hung on well and checked any desire she might have had otherwise to broach to.

The relief of that moment was great. I could have laughed outright for sheer

(Continued on page 156)

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(Continued from page 155)

gladness, for I had a feeling that we were now all right provided that nothing gave. Nor was I mistaken; every dangerous sea passed us harmlessly by and we rode like a duck, sometimes standing almost on our heel, a moment when the following sea looked at its worst, anon standing almost on our nose as our stern topped the crest of the next sea following astern. Thus we negotiated the bar and eventually reached smooth water and our consort, who was wondering with some anxiety as to what had happened. However, "all's well that ends well," and although I would not from choice go through it again, it was an experience I would not have missed. It was a fine exhibition of what an M.L. can live in. Only one thing I regret, that the instructor who informed me an M.L. was impossible to steer, even in the Solent before a following sea, was not with me.

Reprinted from Yachting Monthly

Log of Cruise in 1817

(Continued from page 138)

6 o'clock, went on two or three miles, and it began to rain very hard. We stopped a few minutes under the trees, but it rained so hard we soon got wet, and went on through the rain. It soon began to be very muddy and slippery. We crossed the Wabash twice. It was about waist deep, but we got very wet and had very hard work to travel. We went about thirty miles and came to the middle village, where there are ten or twelve Indian wigwams. We arrived there about 4 P. M. and secured some boiled corn, also thirty or forty ears, which I had boiled, to take with us tomorrow. I gave them 75 cents for the corn and received some noodles. They gave us some corn and boiled squash, also some dried venison, for which I paid 12 cents. Peleg came up before night and ate with us. He was unwell. We could not lodge in their wigwams, so we started about sundown, and, going into the woods about one-half mile, took fire with us and made fire, and gathered some brush to lie down on. We had dried ourselves as well as we could, and went to sleep. We had passed Longlewy in the forenoon where he had pitched his tent. He came to the village, passed us and encamped about two miles ahead of us.

September 18th. Up early, ate boiled corn, and started on. It was very muddy and bad traveling, or rather wading, in the mud. We traveled on as fast as we could, having very heavy loads. Besides my pack, I had to carry R. Fowler's rifle, which Peleg undertook to carry, though it was very burdensome. We passed Longlewy's camp, and then he passed us. We traveled rapidly through the mud and crossed several streams of water. Some of them were waist high or more, and several Indians passed us who were going to Fort Wayne. Their horses made the going still worse, as they made the mud deeper. We crossed two or three creeks that were very deep, and some swampy marshes, and arrived at Fort Wayne about 8 o'clock in the evening, being very wet and very much fatigued. We waded St. Mary's River before we came to the fort. Put up at Hunt and Olivers, got supper of bread, milk, etc., and changed our clothes. I gave Thomas Isaac $1 to get some whiskey, and we went to bed, having traveled about thirty-five or forty miles.

Voyage from Fort Wayne to Detroit

September 19th, 1817. We went to Isaac Wobby's,* but he has gone to the treaty. We took breakfast with Jane. I paid $1.12 for our supper and lodging. We tried to buy a canoe or boat to go down the river. I went to the garrison, but the major was so sick that I could not see him, nor could I get an answer until in the afternoon; then it was that we could not have a boat, but we obtained the liberty to cut a tree to make one. We concluded to begin the next morning; bought some soap for 75 cents per pound to wash our clothes, and bought a quart of whiskey for $1.

September 20th. We prepared to make our canoe. I bought some beef for $1.75. We went out into the woods and selected a tree about two and one-half miles from the fort, cut it down and began to work on it, by blocking it out, until night. I trod on the path of a bear and ran a bone in the bottom of my foot, which made me very lame.

September 21st. This day we thought best to be still and not work on the canoe, as we had not often an opportunity of resting on the first day (Sunday). Towards evening we prepared to resume work the next day on our canoe.

September 22d. This morning we employed two hands to help us on the canoe. we went out early, worked all day. There were some very heavy showers of rain, which made us very wet. We worked until night; got the inside dug out, so that it was fit to draw to the river. I paid the men $2 for their work.

September 23d. We prepared to move our canoe to the river. We secured a yoke of oxen and hauled it up to the landing. I bought fifteen pounds of beef for $1.50 for provision. We made our paddles and intended to start about noon, but it rained, and we concluded to wait until morning and start early. I paid Thomas Isaac $3 to get stores, bread, sugar, whiskey, etc. We were ready to start early in the morning, and agreed to take in a woman passenger. Peleg Tabor came on again and wanted to go in our canoe. We consented that he might, if we could get along with him in the canoe. All prepared to start early in the morning.

September 24th. We took leave of Jane Wobby and her family and started about 7 A. M. with Peleg Tabor and the widow Jane Edwards as passengers, and ran down the river in our little canoe, which we called the Roebuck. We went on all day without

*A Brothertown Indian.

much difficulty, and at night camped on the bank of the river, having sailed down the river forty-five or fifty miles this day.

September 25th. We started early in the morning; met a pirogue bound for Fort Wayne. Ran down the river all day and had frequent showers that wet us some. About sundown we passed the old Delaware towns and went until near 9 P. M. in hopes of reaching Fort Defiance, but, being very cold and wet, encamped on the bank of the river, having come about forty-six miles.

September 26th. We passed on down the river, and going down a rift we struck on a rock and swung around and filled the Roebuck and wet our baggage. We cleared out the water, went on, and arrived at Fort Defiance about 9 A. M. We stopped and bought some bread and meat for $2.50. The Auglan River comes in here. We started about half past 12 P. M., leaving Peleg Tabor behind. We ran until after dark and expected to get to Lamot Prairie, but it was so dark we went on shore and encamped for the night. We ran about twenty-five or thirty miles this day.

September 27th. We started very early, ran down three or four miles, and stopped at Lamot Prairie, took breakfast, and then went past an Indian settlement. Two Indians came to us in a canoe and brought some peaches. We let them have some tobacco. We were at the head of the rapids about 1 P. M.; passed down and found them difficult, the water being very shallow and the bottom rocky, so that we had to wade a good deal of the way. We passed down to Roche de Bout before sundown and encamped with some men who were taking flour down to the treaty. It was about nine miles down the rapids and eighteen miles from Lamot Prairie to the head of the rapids. It was very cold and froze some.

September 28th. This morning there was a hard frost. We started about 7 A. M., went down wading and shoving our canoe along over the rocks where the water was too shoal for it to float with us in. The water ran very swiftly, and sometimes we shipped water and had to go on shore to bail. Arrived at Fort Meigs about 11 A. M. and found Isaac Wobby and Henry Nunham* there and put up at their marquee.

September 29th. We attended the treaty meeting, which was held by Governor Cass and General McArthur on the part of the United States, and the Wyandotts, Taidyas, Shawnees, Pottawottomis, Delawares, and some other tribes of Indians. We also attended on the 30th, when the treaty was finally signed by the parties and concluded.

October 1st. We again attended the treaty, and when the presents were given out I received the goods from Governor Cass that were due to the widow Pictrocke, to the amount of $137, and delivered them to Henry Nunham and Robert Schugite to forward to her. We sold the Roebuck to H. Nunham for $8 worth of goods and in the evening we held a council with the Delaware and Shawnee chiefs. The Delawares, in the presence of John Johnson, agent, expressed the desire that the Brothertown Indians would go into their country, and on the 2d I received a certificate from John Johnson of the purport of the council.

October 3d. We engaged our passage to Detroit on board the "Fire Fly," Captain Hammon. Paul and Thomas Isaac assisted in loading the most of the day, and I had a conference with Stickney, the agent for the Miamis, about their lands on the Wabash. We left the marquee and put our packs into a tavern near the landing and lodged there. In the morning my two blankets were stolen from Paul's pack.

October 4th. We were under way about 11 A. M., and going down the river we got onto the rocks, but with some exertion we shoved off and went on down into the lake, and had a fair wind. We ran all night, arriving at Detroit about 7 A. M. on the 5th of October, being about seventy miles from the foot of the Maumee Rapids. We left our packs on board the "Fire Fly" and the next day went about the village, and lodged on board at night. Our lodging was but indifferent.

October 6th. It rained some part of the day. We spoke a passage in the "General Wayne" and bought some stores. Paul Dick and I lodged on shore; Thomas Isaac lodged on board the "Fire Fly." Stores cost $1.25; lodging for Paul and me, $1.

October 7th. We engaged passage on board the schooner "General Wayne," Captain Rough, and put our baggage and stores on board. We took a deck passage for $3 each, and lodged in the hold on the cable.

THE END

*Brothertown Indians.

THE Navy is in urgent need of sextants, either new or used, and any person having one or more of these instruments is requested to bring them to the Branch Hydrographic Office, 78-80 Broad Street, New York City, where they will be inspected as to their fitness for use and an appraised value placed on them.

Sextants with ivory scales or those needing more than minor repairs or adjustments, are not desirable for Navy use.

Payment will be made to the owners of the instruments accepted.

Making Your Compass Tell the Truth

(Continued from page 144)

water level across the movable arm at the base of the shadow thread. Unless this thread is absolutely vertical at the moment the azimuth is taken, the shadow may be anything from one to ten degrees out of true and your azimuth may do a lot of mischief. You can pick up a small metal level at any hardware store cheaply. Sew it in place with thread and be sure it rests square on the arm.

Part II of Mr. Neely's article will appear in November YACHTING

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Wooden Shipbuilding

(Continued from page 146)

architecture. In September, 1846, she went ashore in an exposed position on the Irish coast, and after withstanding the buffetings of the storms of eleven months was got off practically uninjured, and her further services, whether as steamer or sailer, provided abundant evidence of the strength of the iron vessel and its superiority over wood. But even in spite of this object-lesson wood died hard, the Cunard continuing to build of this material into the 'fifties, the Arabia, a wooden steamer of 285 feet in length and 2,400 tons gross, making her appearance in 1852. The vessels we have mentioned were those of what may be termed the transition period. The glories of the wooden ship were dimmed, it is true, but many years were to elapse before the commercial superiority of the metal vessel was generally recognized.

What the new wooden ships will cost is a matter upon which we have at this stage no precise information. They are, it must be recognized, emergency vessels built during the progress of a great war, so that the money paid for material and labor will be greatly in excess of actual cost plus such reasonable profit as would obtain in peace times. Perhaps we have exaggerated the effort of America to reinforce the shipping of the world by 1,000 wooden ships. It was at first assumed that the Shipping Board's 1,000 wooden vessels which were to be built were to have either internal combustion engines or engines using steam generated in oil-fired boilers. Where the oil was to come from was somewhat of a problem, especially during a period of shipping shortage. The existing Atlantic Coast fuel stations are inadequate to handle the enormous amount of fuel that these vessels would have required when all were in regular service. No fuelling can be done in Europe except in special circumstances, because the Allies have to import all their oil-fuel by means of tankers. The 1,000 wooden ships would, therefore, require to carry sufficient oil for a round voyage. Each oil-fired steam-driven vessel, if of 1,400 i. h. p., would have a daily consumption of not less than 15 tons, reckoning on a moderate basis of one pound per i. h. p. hour. Thus 1,000 steamships would have a total fuel-consumption of 15,000 tons (105,000 barrels) per twenty-four hours. A round voyage to Europe and harbor time will take about a month (thirty days) which means that every month not less than 450,000 tons of oil (3,150,000 barrels) must be delivered to the fuel depots in Atlantic Coast harbors. For twelve months the necessary quantity would be 5,400,000 tons, or 37,000,000 barrels. Mexican and Texan crude oils would be chiefly called for, but some Pennsylvanian and, possibly, also Californian oils might have been used. In order to maintain the supply at the depots no fewer than 68 steel tankers of about 6,000 tons deadweight, each carrying 5,000 tons of oil-fuel, would be required in regular operation, on a basis of a three weeks' round voyage per tanker. So large a number of tankers are unobtainable inside three years. A thousand Diesel-engined ships, of 1,400 i. h. p., would require only 3,800 tons (26,000 barrels) of oil fuel a day, or about 114,000 tons (798,000 barrels) a month; so that eight tankers of 10,000 tons, and one tanker of 5,000 tons, could maintain the necessary supplies at the depots. A thousand vessels with surface ignition engines would require about 200,000 tons (1,400,000 barrels) a month, and so need fifteen 10,000 tons tankships or thirty 5,000-ton tankships in regular operation. Small wonder, therefore, that this pretentious scheme for an oil-consuming fleet was abandoned and triple-expansion engines substituted as the motive power. Canada, too, has a programme which may run to 100 wooden steamships. Whether they will be supplied or no remains to be seen. But like those of the States, they are emergency craft, and their advent will not in any way militate against the use of steel as the shipbuilding material in those ardently hoped for days when the nations will have ceased from warring.

As the effort to increase the supply of ocean tonnage by wooden ships has developed, it has been abundantly demonstrated that the difficulties in the way are of such a character, that whatever may be achieved during the next two years, it is tolerably certain that the resuscitation of the wooden ship is but an evanescent scintillation. The skilled men who could transform the forest logs into an ocean-going vessel belonged to a by-gone generation, and much of their art and practice has fallen into desuetude. Further, the supply of seasoned timber is limited and the use of greener material will further accentuate the economic advantages of steel as a shipbuilding material. And with this scarcity of suitable timber and skilled labor there must be included another factor. This is an iron age. Iron and steel have done much for the advancement of the world, and the present shortage of steel will not long be allowed to continue. Herculean efforts are being made to increase the supply, and with this insured, the knell of the wooden ship will be finally rung; except, of course, in the case of small craft. Still, this revival as a war-time emergency measure is an interesting event in the world's history. It recalls the earlier triumphs of ocean transportation, through the days of the white-winged sailers, and the painful but progressive efforts of the naval architect and the engineer to bridge the ocean. That such success as was achieved should have been secured with wooden hulls is certainly not the least triumph of the naval architect.

One-Way Glass

FOR making range-finders, checking eye-pieces for gun-sights, for comparison oculars, binocular microscopes and for other purposes it has been found necessary to produce a one-way glass; that is, a glass which looked through from one side is transparent, while looked at from the other is opaque and functions as a mirror. This is brought about by silvering in such a manner that exactly the same measure of light is transmitted *through it* as is reflected *by it*. It was originally accomplished by silvering the entire surface of one side of the plate first and then removing one-half of the covering in the form of thin, alternate strips, set close together. Technical difficulties induced an improvement which consisted in covering the surface with a film of silver so thin that the same result is accomplished; that is, that there is a perfect balance of light transmitted against light reflected. The peculiar properties of platinum make it very desirable to use platinized glass for military optics and methods for its use in this respect have been technically developed. This is another reason why the metal should not be used for making jewelry.

The invention was perfected in Germany before the war and it was immediately put to use not only for purposes of military observation, but also for the delectation of the most favored of the nobility. There was, for instance, the high-well-born Freiherr von Namenvergessen, who, being a man of wealth and influence, procured enough of the one-way-glass to equip the guestroom walls of his castle so that they appeared as ordinary mirrors to his guests, *while he had convenient posts of observation* provided for himself at the back. This type of German humor would never appeal to Boston and we confess it does not appeal to us. There are, however, many uses to which one-way glass could be put with profit and convenience. In a business office, for instance, the eye of the master is often a useful instrument, whereas he frequently needs privacy for conferences. Therefore, a private office enclosed in this kind of glass would often be desirable. It would be agreeable in many windows; in short, with considerable limitations, it would provide a curtain of invisibility, less effective than the legendary gift of Minerva, but useful in a thousand ways.—*The Little Journal.*

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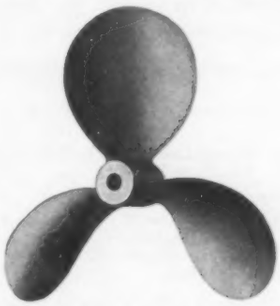

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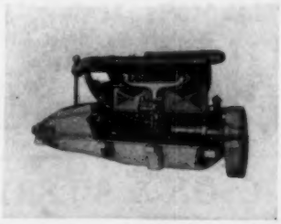

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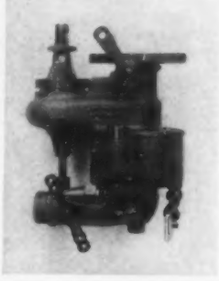

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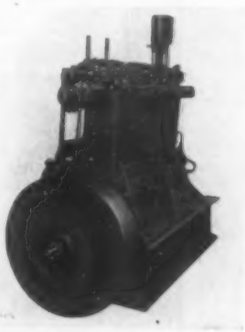

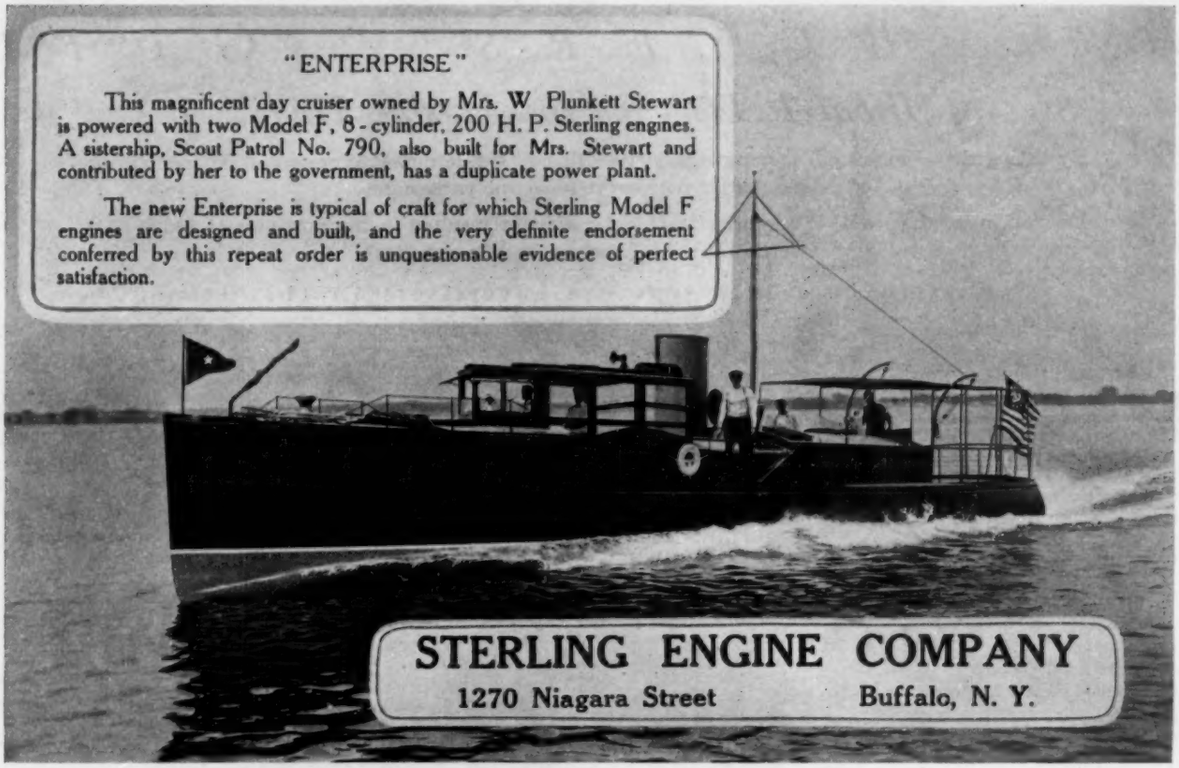
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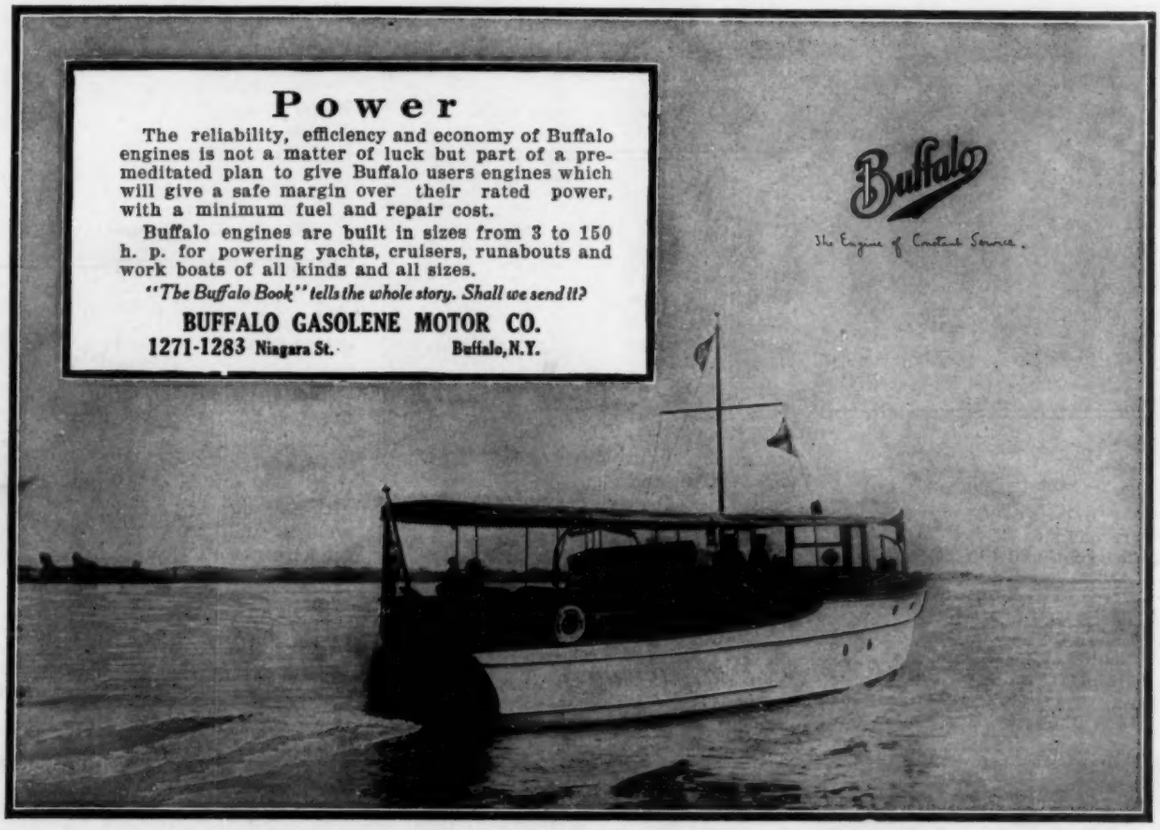
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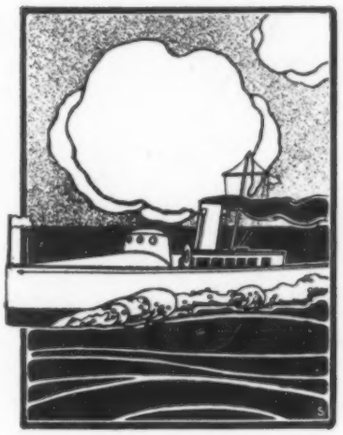

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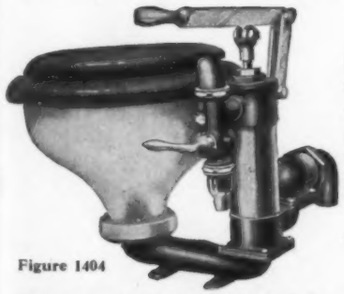

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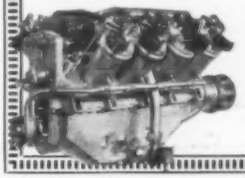

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